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WORLD EPIDEMIOLOGY REVIEW

No. 77



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This serial publication, based on worldwide press and radio reports, contains information on the epidemiology of human, animal, and plant diseases. Disease incidence, reported outbreaks, and various related epidemiological factors are included. Items are presented by country of occurrence rather than by country of original press report.

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I. HUMAN DISEASES

BRAZIL

LACK OF MEASLES VACCINE HALTS PROGRAM IN RIO

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 5 Oct 76 p 20

[Text] The Secretary of Health for the state of Rio will not be able to complete its measles vaccination program because until now the Medication Central Unit has sent only 50 percent of the 500,000 doses necessary for this year. The director of the Department of Epidemiology of the Secretary, Samuel Penha Vale, says that the worry of the experts is greater because they are seeing a substantial increase in the number of cases in relation to the past year. The experts estimate an increase of 135 percent.

In the first half of 1975, 440 cases were recorded, and for the whole year, 1,731 cases, whereas in the first half of 1976 alone, the number of cases has reached 1,033. The epidemiologists of the Secretary of Health explain that the incidence of measles is always greater in the second half of the year, which leads them to consider 1976 to be a year of outbreak of the disease in the state of Rio, with a mortality rate calculated at about 12 percent.

Another problem which the lack of vaccine will cause is the increase of the target population for next year, because the number of children susceptible to contracting the disease will be greater, as a function of the deficits in the program this year. The lack of vaccine in the state of Rio is being attributed to the problems of resources of Ceme [Medication Central Unit] and the consequent difficulty in importing vaccine.

Samuel Vale explained that the Secretary of Health was waiting for an outbreak of measles this year as a consequence of the cyclic characteristics of the disease.

"The progression of measles in the state of Rio confirms this thesis. In 1971 we had 7,372 cases, and in 1972 there were 2,667 cases. The following year the incidence rose with the reporting of 3,509 cases, decreased in 1974 to 3,120, and reached the lowest point last year."

HEALTH LABORATORIES TO BE INSTALLED THROUGHOUT COUNTRY

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 17 Oct 76 p 47

[Text] Almeida Machado, minister of health, yesterday stated that the program to combat schistosomiasis will require 14 million tests to be made, while the battle against Chagas disease will need another 4 million. This explains the ministry's haste to install throughout the country a total of 24 new central laboratories, 65 regional laboratories and 420 local laboratories.

Minister Paulo de Almeida Machado gave these explanations in Salvador when he inaugurated the first of these units, the Goncalo Muniz Central Laboratory. Two other similar units will be installed in November, in Espirito Santo and in Rio Grande do Norte. The State of Bahia this year received a subsidy of 4.2 million cruzeiros from the Ministry of Health to install two more regional and 10 local laboratories.

Up to a short time ago, the minister recalled, there were only 23 public health laboratories in Brazil, 17 of which were in the State of Sao Paulo. The new program anticipates the installation of a total of 509 more units spread throughout national territory.

FIRMS TO COMBAT MALARIA, YELLOW FEVER IN AMAZON REGION

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 23 Oct 76 p 15

[Text] The control of malaria and yellow fever in the extensive agricultural and cattle-raising projects of the Amazon region will be undertaken by industrial firms which will count on the Ministry of Health's support. All personnel to be hired in the region will be examined by the firms which will treat only cases of malaria with remedies supplied by the ministry and, at the same time, will vaccinate all workers against yellow fever. The cooperative agreement with this objective was signed yesterday in Santana do Araguaia, in Para, between Ernani Motta, superintendent of the ministry's public health campaigns, and Joao Carlos Meirelles, president of the Association of Employers in the Amazon Region. The work is slated to begin in the next few days in 27 of the 145 agricultural and cattle-raising projects scattered throughout the south of Para and the north of Mato Grosso and Goias.

The regions where the projects are located, with SUCAM [Superintendency of Public Health Campaign] approval, have shown a high number of malaria cases because of the large gathering of workers who are heading there in search of work. "The Amazon region," as the minister of health emphasized, "is the last redoubt of malaria in Brazil and its control in the region will be possible only with the employers' support."

The need for this agreement is highlighted even by the employers located in the Amazon region, for the rhythm of establishing farms is being thrown off by the large number of workers who have come down with malaria. Up to now, the firms have confined themselves to distributing antimalarial tablets among the sick workers, but have done nothing--with the exception of Icomi, located in Amapa--to prevent the disease. The vast expanse of the properties (at the least 20,000 hectares) hampers the work of the SUCAM health supervisors.

According to the agreement signed yesterday, the Ministry of Health will train employees, especially chosen by the firms, in the skills of collecting blood samples, performing laboratory tests and treating persons whose tests results were positive. The work will be directed by the ministry which will oversee the operation of each project's laboratories, the proper administration of drugs and the spraying of houses.

The Association of Employers in the Amazon Region has undertaken to arrange with each firm to send an employee to be trained by the ministry; to set up a small laboratory in each project for malaria diagnosis; to build near the laboratory a shed with screened windows and finished walls for the control and treatment of the sick; to set up in the woods camps which, though rustic, have vertical walls finished off with straw or some other material which will make it possible to spray them with DDT; to avoid the construction of camps near stagnant water and, in the deforested sites where the dwellings do not have finished walls; and to make use of a spraying system with another insecticide to ward off the presence of mosquitoes, the carriers of the disease. Although the agricultural and cattle-raising projects absorb few workers (on an average of one worker for each hundred hectares) the minister of health emphasized his concern for the health of the people who settle there. And, recalling that the remedy prescribed, now available in the region through the project hospitals, does not prevent the appearance of sick people. Almeida Machado suggested that the employers also begin to consider the possibility of an agreement to combat schistosomiasis, as soon as the rhythm of fighting this disease decreases in the Northeast, thereby freeing SUCAM equipment and personnel.

The minister's concern is taking into account the large number of dams which the agricultural and cattle-raising projects have been constructing and which are potential foci for infestation by snails, the carriers of schistosomiasis, mainly in view of the coming and going of the Northeasterners in the region who are doing contract work on occasional

deforestation jobs. The great victory won indirectly by the Ministry of Health on signing the contract was the assurance on the part of the employers to improve the housing standard for those working on the projects.

GERMAN MEASLES OUTBREAK IN BELO HORIZONTE

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 26 Oct 76 p 23

[Text] For the past 2 months, the city of Caete in the metropolitan area of Belo Horizonte has been faced with an outbreak of German measles which has attacked 20 to 30 children a month. For this reason, all teachers in the initial phase of pregnancy will be given leave of absence by their schools, in accord with the directives from the State Ministry of Health.

Dr Romeu Teixeira, head of the local health center, considers this outbreak "normal for this time of the year." He is advising the population--particularly women either married or about to be married, who are not yet pregnant--to be vaccinated against the disease. The vaccine, however, can be acquired only in private clinics as the health center has not yet received any for free distribution.

According to Dr Romeu Teixeira, the outbreak occurred about 2 months ago and mainly attacked school-age children. In addition to the fetal harm done when it attacks women in the early stages of gestation, German measles can also cause encephalitis should the virus attack the nervous system.

The doctor gave the people a series of facts based on an article on the subject written in a weekly publication, and explained the correct course of action in the presence of the disease. After saying that German measles is caused by a virus which attacks the skin and is transmitted from person to person by saliva droplets or by direct contact with the sick person, he recommended the vaccination of everyone over 1 year of age.

BATS ATTACK FISHERMEN IN PARANA

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 27 Oct 76 p 16

[Text] Twelve inhabitants of a fishermen's beach, among them some children, on Eufrasina island, in the Paranagua region, were attacked by vampire bats, one of the main carriers of rabies, and are now under medical observation. The incident occurred at the end of last week, but was made public only yesterday by the Animal Health Protection Coordinating Department of the State Ministry of Agriculture, which sent technicians to the locale. This is the second case this year, the first occurring in Matinhos, also on the Parana shore, when nine persons were attacked by bats.

The Eufrasina fishermen were bitten on the nose, on the forehead and toes, while they slept. Some of them ran into a problem trying to stop the flow of blood, for the vampire bat, when it attacks, emits a substance in its saliva that slows up the coagulation of blood. Technicians succeeded in catching 15 bats, which are being analyzed.

CAMEROON

FORTY PERCENT OF CAMEROONIANS HAVE MALARIA

Yaounde CAMEROON TRIBUNE in French 19 Oct 76 p 2

[Excerpts] In our country disease is no small thing: at least 4 out of 10 Cameroonians have malaria. Moreover, the vast long-term measures taken by the government to eradicate malaria reach only the tip of the danger which malaria represents among us. In fact Cameroon, with the aid of WHO and UNICEF, launched spraying campaigns in 1954 continuing until 1964, both in the cities and in the rural zones. These campaigns contributed generally to decreasing the disease in those areas that had been sprayed. It was thought that it was possible to eliminate malaria entirely, especially in forested areas where the people return to their homes at night. In savannah areas, where the people often spend the night outdoors in the company of mosquitoes which cannot be eliminated, the problem is much more complex. Perhaps it is possible to understand why, in the malaria statistics available to the OCEAC [Organization for Coordination in Control of Endemic Diseases in Central Africa] (Gabon, CAR, Congo, Chad and Cameroon), it is Chad, dominated by savannahs, which takes first place for the monthly average of known cases and of deaths from malaria: respectively 16,271 and 26 for the first 7 months of this year.

CHAD

VACCINATION CAMPAIGNS

Ndjamena INFO TCHAD in French 13 Oct 76 pp 11-12

[Text] Starting on 18 October, the medical teams of Major Endemic Sector No 1 (Chari-Baguirmi) will undertake a campaign of medical detection and vaccination in the capital. They will search essentially for four endemic diseases: trypanosomiasis, leprosy, tuberculosis and syphilis. At the same time, they will vaccinate the population against four endemic diseases: smallpox, tuberculosis, yellow fever and measles.

These systematic vaccination campaigns are necessary because of population renewal (mass vaccination is organized each year to protect the newborn) and the duration of protection of each vaccine. Hence, this year, the entire population of Ndjama and Chari-Baguirmi will be vaccinated against smallpox. The last general vaccinations were administered 3 years ago. There have been no smallpox cases in Chad for 10 years, but there is the fear of imported cases that might occur with movement of the population.

The Second Peak

The other vaccinations are only for parts of the population, especially the young people. BCG (against tuberculosis) will be given to infants from zero to 18 months, and up to 20 years for those individuals who do not have a scar of this vaccination (on the arm). Measles vaccination will be effected in babies from 9 to 18 months who were not vaccinated last May.

There was a major epidemic of measles in Ndjama in April and May of this year. Thousands of children were vaccinated at the time, but many infants were not included in the campaign. There are two epidemic peaks of measles in the large cities, one in April-May and the other at the end of the year. The peak of the first period has already passed. This new vaccination series is being undertaken in the hope of avoiding an excessively large number of victims for the end of 1976.

Finally, yellow fever vaccination will also be limited this year to babies between 12 and 24 months. The entire population will be vaccinated next year.

Universal Vaccination

In 1977, teams from Sector No 1 will cover all of Chari-Baguirmi for the same detection and vaccination campaign. The other sectors will probably organize similar campaigns in the prefectures of their jurisdiction because the periodicity of the vaccinations is generally the same all over the country. However, these vaccinations cannot effectively protect the population unless at least 80 percent of the inhabitants of each area are vaccinated. Epidemics cannot be avoided if only half of the population is vaccinated. Everyone is therefore asked to come en masse to the detection and vaccination sessions.

EAST GERMANY

DETAILS SUPPLIED ON INFLUENZA INOCULATION

East Berlin BERLINER ZEITUNG in German 16/17 Oct 76 p 13

[Interview with Dr Konstantin Spies, deputy minister of public health and professor of medical science: "Do Influenza Shots Really Offer Protection?"]

[Text] The next influenza season is certainly coming, and a person is well advised to protect himself from it in time. Although it does not offer 100-percent security, doctors nevertheless describe influenza shots as the best preventive measure. Deputy Minister of Health and Professor of Medical Science Dr Konstantin Spies discussed details of the matter in an interview with the press.

[Question] Inoculation against influenza began in all kreises on 15 September and will continue until 30 November. Who should get this inoculation?

[Answer] The vaccine protects to a high degree against illness caused by the type A/Victoria virus, which triggered the epidemic at the beginning of the year and which can be expected to return in the fall, in the opinion of the World Health Organization (WHO).

We recommend that everyone get the inoculation, particularly those who work in areas where the danger of infection is quite high, such as in commerce and supply, in construction and transportation, and in education and health care. As complete as possible immunization of whole collectives is the goal. Beyond that, older citizens and others who suffer from chronic ailments of the heart, lungs, metabolism and other organs should get the inoculation. All citizens who have reached the age of 16 should be immunized. The shots are given in enterprise polyclinics, outpatient clinics and prophylactic stations, in old people's homes and nursing homes, and in outpatient facilities of the public health service and in permanent immunization stations during public immunization periods.

Immunization with the well-tolerated vaccine consists of two injections with a syringe or immunization gun with a 2 to 4 week interval between injections. Sometimes a slight reddening or swelling occurs at the place of injection, but it quickly subsides.

As in the case of all other inoculations, persons who are seriously ill or who are running a fever are excepted, as are convalescents. Anyone who is allergic to chicken albumen is advised against inoculation because this is the basis for the production culture of the vaccine. Anyone who was

ill with influenza last winter should also be protected because in these cases inoculation increases immunity. The outpatient health facilities, and particularly the kreis and bezirk hygiene inspectorates, will answer all questions.

[Question] Does the inoculation offer genuine protection?

[Answer] It is unquestionably--and this is also confirmed by international experience--the best preventive measure. In general we achieve a 60 to 70 percent protective rate. There is no longer any question of whether this immunization is worth it. Naturally, this effect is also dependent on the "degree of immunity," that is, on how much immunity the populace on the whole has acquired.

[Question] The influenza viruses have the unpleasant trait of appearing from time to time in the form of new types and varieties. How are we prepared for this?

[Answer] Because of this fact it is necessary to change the development and production of vaccine according to the objective data and, when necessary, to change over quickly. In general, influenza virus A--the most important virus--changes little in 1 to 3 years. Thus in 1973-74 the variant A/Port Chalmers appeared, and a change in 1975 led to the variant A/Victoria, which is also expected in 1976-77.

It is different with a continuing change of the virus such as happened for example in 1968 with the "Hong Kong Flu." Only a specific vaccine will protect against this. Only a highly developed production can produce it quickly and in sufficient quantities. The work of national influenza laboratories in all parts of the world--and the Reference Laboratory for Influenza of the German Democratic Republic is also one of them--is coordinated by WHO. These laboratories supervise and check on influenza viruses. The international WHO Influenza Laboratory distributes the currently isolated virus to the producers of vaccine of the member countries. At present we are creating conditions in our country by which we can produce sufficient quantities of high quality vaccines within 2 to 4 months for any possible virus which might crop up.

At the beginning of this year, in a local outbreak of influenza, virologists in the United States isolated a virus which differed biologically to a considerable extent from the influenza viruses which had prevailed in past decades. This virus is comparable only to the virus of the "swine flu" and the Spanish influenza epidemic of 1918-19. But so far intensive national and international controls have resulted in a climate in which no such virus has so far appeared in the world a second time.

The socialist countries have also planned their strategy of joint campaign against such eventualities. There are uninterrupted control programs to

catch any possible appearance of the "swine flu." All fraternal countries are preparing a corresponding vaccine reserve.

[Question] What are the possibilities in our republic for further development of vaccine?

[Answer] The Ministry of Public Health is devoting great attention to the improvement of influenza vaccines. In pursuit of this goal there is close collaboration, particularly with the Soviet Union.

We are familiar with the preparations in the Soviet Union for putting a new method into practice. In this method, the influenza viruses to be used are concentrated and the excess albumen removed. This means a further improvement in the degree of toleration and effectiveness. The institutes of our republic joined together in the Research Association for Protection Against Infection--the VEB Saxony Serum Plant in Dresden, the Berlin Institute for Applied Virology, and the Berlin State Control Institute for Serums and Vaccines--are also working in this direction in close cooperation with the Union of Socialist Soviet Republics.

ECUADOR

MEASLES EPIDEMIC AND SUSPECTED POLIO CASES REPORTED

Quito EL TIEMPO in Spanish 12 Oct 76 p 12

[Text] Esmeraldas--A severe epidemic of measles is affecting the infantile population of Rosa Zarate Parish, particularly in the Chamera area, and has even afflicted a good number of adults, according to our correspondent in Quinde Canton. He reports besides that several children from 6 months to 3 years of age have died as a result of this intense epidemic.

Our correspondent says that it is suspected there are outbreaks of poliomyelitis in the same area, to judge from the symptoms presented by the patients, and adds that no medical assistance has ever been provided to the area and, furthermore, no vaccination campaign against those terrible diseases has been conducted in the place. For that reason, the inhabitants of the district have expressed their concern and understandable desire to have a medical team sent in for the purpose of controlling the spread of the diseases and treating the patients, who are mainly poor people unable to travel to the city of Esmeraldas to receive medical attention.

POLIO CASES IN PICHINCHA PROVINCE DURING LAST 5 YEARS REPORTED

Quito EL COMERCIO in Spanish 16 Oct 76 p 20

[Text] Statistics reveal that the greatest number of poliomyelitis cases are registered in odd years.

The Ministry of Public Health reported that 113 cases of infantile paralysis have occurred in the province of Pichincha in the last 5 years. In connection with the promotion of vaccination against poliomyelitis in Pichincha, the ministry announced that the 113 cases between 1971 and 1975 occurred among children under 3 years of age because they were not vaccinated at the proper time. The ministry supplies the Sabin oral vaccine without cost to children between 2 months and 3 years of age.

The occurrence of these cases also indicates that the disease is always latent in our midst and at times becomes more intense, turning into an epidemic.

According to the information of the Ministry of Public Health, the aforementioned polio cases in Pichincha were distributed as follows: 57 cases in 1971, 35 in 1972, 16 in 1973, none in 1974, and 5 in 1975, for a total of 113 cases.

The foregoing figures show that the immunization programs that have been carried out are effective, because the index has dipped to zero, as in 1974. Hence the importance of the immunization campaigns, such as the one starting in Quito on Tuesday the 19th.

The Ministry of Public Health has made an appeal to all parents to take their children to the vaccination centers, which will be in operation at convenient locations throughout the city.

ABOUT 60,000 CHILDREN WILL BE VACCINATED AGAINST POLIO

Quito EL COMERCIO in Spanish 19 Oct 76 p 14

[Text] The infantile population of the urban area and the environs of Quito subject to vaccination against poliomyelitis numbers 57,862, according to the statistics compiled by the Provincial Health Center of Pichincha, which today is starting the campaign to protect children between the ages of 2 months and 3 years against that disease. This estimate comprises 100 percent of the infantile population, in view of the fact that the health center has conducted activities and campaigns of this nature with complete success under the close supervision of the Ministry of Public Health.

It is the duty of the parents to take their children to the nine health units and the additional vaccination places in this city, to avoid that the children be stricken with paralysis.

The first of the three doses of the vaccine, which is oral, will be administered starting today. After a period of time, the second dose will be administered starting next 7 December, and the final dose is scheduled for 25 January of next year.

It is essential that the child receive the three doses, since one or two do not provide immunization.

Promotional Campaign

In the meantime, the health center of Pichincha and the Epidemiology and Health Education Department have carried out an advance promotional campaign among physicians and functionaries of the urban and rural zones of this province in order to ready them for this massive immunization program. Dr Jose Castro Cornejo, who heads the epidemiology section, and Juan Alvarez, who heads the health education section, have summoned the professional personnel of the health center to impart the proper directives.

OUTBREAK OF GASTROENTERITIS UNDER CONTROL IN MANABI PROVINCE

Quito EL COMERCIO in Spanish 16 Oct 76 p 20

[Text] Guayaquil, 15 Oct--The provincial center of Manabi reported that it has managed to control an epidemic outbreak of gastroenteritis which took place in the Rocafuerte locality of that province 2 months ago.

The top provincial health official of Manabi, Dr Humberto Moreno Loor, asserted that the outbreak received the immediate attention of the Ministry of Health, as well as of the provincial center through its 64 health units.

Gastroenteritis, a very dangerous disease that is generally fatal if not properly treated, is an inflammation of the mucosa of the stomach and the intestines. Moreno Loor affirmed that the fatality of the outbreak that took place in Rocafuerte "did not register figures of statistical significance."

Drop in Mortality

In connection with this matter, the chief health official of Manabi reported that infantile mortality figures for the town of Rocafuerte have had a drop of 50 percent in the last 10 years, the time that health services have been maintained in that area.

ANTIMEASLES VACCINES RECEIVED FOR NATIONWIDE CAMPAIGN

Quito EL COMERCIO in Spanish 16 Oct 76 p 20

[Text] Some 104,000 doses of antimeasles vaccines, which will serve to immunize about 280,000 children between 1 and 2 years of age, have arrived.

With those doses, to which others will be added to bring the number up to 200,000, the Ministry of Health will start the antimeasles campaign that will cover the whole national territory.

The vaccine is distributed among all the provinces of the country according to the mortality rate of each region. This index is established in accordance with the data furnished by the top provincial health officials.

The first provinces to receive the vaccines were Chimborazo, Bolivar, Los Rios, El Oro and Canar. The others will be taken care of within the next few days.

The Ministry of Health is confident that 80 percent of the infantile population susceptible to the disease will be immunized under this vaccination program.

FRANCE

RABID PONY KILLED

Paris LE MONDE in French 16 Oct 76 p 27

[Text] A pony at the Moulin-du-Bois amusement park in the town of Fillieres, near Briey, in Meurth-et-Moselle Department, was ordered killed by its owner after it had bitten a man on 26 September who had been riding it. Veterinary examination subsequently confirmed that the pony had rabies. The mayor of Fillieres urged all those who had been in contact with the animal to obtain antirabies shots.

GUYANA

THREE-DAY MALARIA CONFERENCE ENDS

Georgetown CHRONICLE in English 21 Oct 76 p 3

[Article by Hugh Vandeyar]

[Text] Chief Medical Officer Dr Robert Baird yesterday expressed the hope that every effort would be made by the five border countries involved in the malaria eradication programme to implement the recommendations approved at their third triennial meeting held here.

Dr Baird was at the time addressing delegates from Venezuela, Brazil, Surinam, French Guiana, and Guyana at the end of their 3-day conference, held in the Nurses Training Centre of the Georgetown Hospital.

Recommendations

He said that he was certain that "all of us would implement the recommendations," and that if this was in fact done, it would go a long way towards the eradication of the dread disease, malaria.

But the C.M.O. noted that because of the geography, topography, climate and habits of the people, it would be difficult to eradicate completely the disease from our borders.

Dr Baird, however, felt that "with help from the Pan American Health Organization [PAHO] and with the flexibility that the United Nations International Children's Emergency Fund [UNICEF] was now showing, I believe these border countries would be able to achieve the objective of implementing the decisions made at the meeting."

He said that from the deliberations over the past 3 days, the delegates covered the topic--the malaria border problem--comprehensively and in a meaningful fashion.

He noted that all the border countries were able to be present and as a result they had a successful meeting.

Dr Baird, however, remarked that Guyana was unfortunate in that on the occasion of its hosting the meeting for the first time there was a resurgence of malaria in certain areas.

"But today we were able to share our experiences with our colleagues and they, in turn, did the same and gave us advice and suggestions and what we have learned here would help us to contain our resurgence and assist us to come back to the position we were in in 1974."

The recommendations will be disclosed later, the CHRONICLE was informed.

Three delegates from Surinam were present, and two each from Brazil, Venezuela and French Guiana, while the host country had a team of 12, headed by Dr Baird.

The Caribbean Community Secretariat [CARICOM] had one delegate while there were seven from PAHO-WHO.

Dr T. Rex Jones, principal medical officer, Ministry of Health, Guyana was unanimously elected chairman of the meeting on the opening day, while Dr J. P. Digoutte, director of the Pasteur Institute, French Guiana was the vice chairman.

Professor B.F.J. Oostburg, director of the Bureau of Public Health, Paramaribo, was the rapporteur of the meeting, while Cde R. E. McKinnon of Guyana's Ministry of Health was the coordinator. Two local interpreters assisted the Spanish and Portuguese-speaking delegates--Cde Cicely John and Cde Marion Farfan, respectively.

A decision is to be taken later by the five countries as to the venue for the fourth triennial meeting.

INDONESIA

CHOLERA DEATHS ON SUNDA ISLANDS

Hong Kong AFP in English 1510 GMT 8 Nov 76 BK

[Text] Jakarta, 8 Nov (AFP)--Cholera deaths in the Lesser Sunda Islands of Indonesia for the first 10 months of this year totalled 102 for 2,569 cases. The number of deaths in the past 4 years was 1,165.

DENGUE FEVER IN INDONESIA

Jakarta ANGKATAN BERSENJATA in Indonesian 5 Nov 76 p 4

[Excerpt] Dengue hemorrhagic fever can be called a relatively new disease. The first epidemic in Indonesia was reported in 1968 in Surabaya. Until 1971 its spread was limited to Java. In 1971 reports from outside of Java began to appear, from Lampung and West Sumatra. In 1973 no less than 1,034 deaths were reported. The spread of dengue fever reportedly occurs in areas where there are many Aedes aegypti mosquitoes. A report of the Asia regional WHO office in Manila showed that the disease had spread to

Malaysia, Vietnam, Cambodia, French Polynesia, Indonesia, Thailand, Burma and the Philippines.

The occurrence of the disease is closely related to density of population, and cannot be separated from crowded living conditions and dirty environment which are widespread in Asian cities.

At first the disease was believed to be confined to cities but recently it has also spread to village areas. This is probably caused by the movement of people which had enabled the disease to move from its sources in the cities to small neighboring towns. The spread of the disease to the rural or village areas is very important in Indonesia because the majority of its population lives in villages.

The disease is caused by a type of dengue virus. In the past, four types were known. In the epidemic of 1973 in Jakarta the fourth virus could be separated from the blood of patients treated at the Cipto Mangunkusumo Hospital in Jakarta.

We know that prevention is better than medication. The best method is to eradicate the Aedes mosquito by keeping houses clean and well-lighted/ventilated and by eating well, getting enough rest and keeping clean.

JORDAN

CHOLERA INOCULATIONS BEGUN FOLLOWING OUTBREAK OF DISEASE

Amman AL-DUSTUR in Arabic 12 Oct 76 pp 1, 13

[Text] Dr Muhammad al-Bashir, minister of health, yesterday afternoon visited the internal diseases section of al-Ashrafiyah Hospital to acquaint himself with the medical services which are being provided to several citizens who have shown symptoms of cholera.

A Limited Number of Cases

The minister spoke with the patients, expressing his hopes for their speedy recovery.

Dr al-Bashir said that a limited number of cases with symptoms of cholera had appeared recently in Amman and then al-Zarqa and in one of the refugee camps, in addition to one case in Ma'daba.

The Ministry of Health hastened to take immediate steps to treat the patients and to confine the disease to the areas in which the cases had appeared. The minister pointed out the immediate steps which the ministry

had taken to disinfect water sources and storage facilities, to open voluntary disinfection centers in all Ministry of Health centers and official and private clinics, to mobilize the entire protection machinery of the state and civil and military medical bodies, public and private and to provide sound health protection for all citizens in all parts of the kingdom. This is in addition to the formation of medical inoculation teams in schools and public places which will start their work in an extensive inoculation campaign beginning this morning, Tuesday.

Confining the Disease

The minister expressed satisfaction with the efforts which had been and are still being exerted to confine the disease as much as possible.

With regard to the citizens who have received treatment in al-Ashrafiyah Hospital, Dr 'Adnan Abu Rajab, chief of the internal diseases section of the hospital, said that a number of patients had recovered and had left the hospital. He pointed out that early treatment of a patient is an important factor in a speedy recovery from the effects of this disease. He said that symptoms of the onset of the disease are severe pains in the stomach in addition to severe diarrhea and vomiting.

He said that protection from this disease requires attention to cleanliness in the home, boiling water before drinking it, washing fruits and vegetables, and disinfecting water.

Dr Abu Rajab stated that the small number of patients who are being treated at al-Ashrafiyah Hospital are on their way to recovery and the state of their health is good and reassuring.

Thirty-Five Cases

An official source in the Ministry of Health said that so far a total of 35 cases had been discovered, all of whom had been put in Children's Hospital in Amman. Of these, 16 persons have recovered after receiving medical treatment and remain under medical observation and 19 others are in generally good condition. So far no deaths have occurred as the result of these cases.

Medical Precautions

Since the beginning of last August, the Ministry of Health had begun to take the necessary medical precautions because of the probability that cholera might be carried by persons arriving in Jordan following the appearance of a number of cases in neighboring countries.

The Ministry of Health had called upon all officials in all departments of the government concerned to help to prepare and implement a comprehensive protection plan.

The Ministry of Health was assisted in this by the royal health services and the various public protection agencies, both public and private. A start was in fact made in implementing the protection plan which had been prepared in light of the expectations of the Ministry of Health.

Operations were carried out to keep an eye on and purify water with the necessary substances in all parts of the kingdom. The Ministry of Health also directed doctors in the private and public sectors to watch for any symptoms of cholera, particularly diarrhea, and to refer them to government hospitals in various areas.

The precautions encompassed public facilities and services centers at all border points by disinfecting all persons working there and monitoring any foodstuffs which might be conducive to transmission of the disease germs.

The Ministry of Health also provided all medical centers and clinics, both governmental and private, with anti-cholera vaccine to facilitate the inoculation of those who desired it.

The Ministry of Health hopes that citizens will respond and cooperate in service to public health, not by relying on inoculation alone, but also by following the instructions and guidance of the Ministry of Health in the area of public health, primarily concern for general cleanliness and avoiding causes of contamination of food and water.

MALAYSIA

UPSURGE IN DENGUE CASES REPORTED

Kuala Lumpur NEW STRAITS TIMES in English 14 Oct 76 p 9 BK

[Text] Kuala Lumpur, Wednesday--Stronger action will be taken to combat the mosquito menace following an upsurge in dengue cases, especially in the federal territory, since July.

Director of Health Services Dr Raja Ahmad Nordin said that from July until now, 174 cases of dengue fever including 13 deaths were reported.

For the same period last year there were 99 cases, including 10 deaths.

From January to June this year, there were 150 cases, including 13 deaths, compared with 266 cases, including 26 deaths, for the same period last year.

"This shows that since July, the disease has been more active than last year even though the situation this month has shown some improvement," said Dr Raja Ahmad.

Dr Raja Ahmad said the worst affected area was the federal territory where 77 cases including eight deaths have been reported since July. This brings the number of cases in the federal territory for the year to 117 cases with 11 deaths.

He said the dengue-prone areas in Kuala Lumpur were Jinjang, Kampung Baru, Sentul, Brickfields, 2-3/4-mile Jalan Ipoh, Setapak, Segambut, Gombak, Cheras and Salak South.

"The steps taken by the health authorities of the federal territory, until recently, were to visit homes to check for mosquito larvae, spray insecticides on likely dengue-bearing places, and enforcement of the disease-bearing insects act.

"But since October 7, a new strategy has been introduced where residents are encouraged to buy and use abate in water containers and stagnant water. They are also asked to destroy any unused containers."

Dr Raja Ahmad said a campaign will be started with the cooperation of the community relations council in dengue-prone areas.

"Mobile teams will explain the use of abate to residents. They will also be told where abate can be bought."

He said voluntary bodies will be contacted to help in this campaign. Talks will be given to residents on dengue fever.

CHOLERA-FREE ZONE

Kuala Lumpur Domestic Service in English 0000 GMT 5 Nov 76 BK

[Text] Sarawak and Sabah have been declared cholera-free. A statement from the Ministry of Health said since the outbreak of cholera in Sarawak last May, 159 cases were reported in nine districts with three deaths. The nine districts included Kuching, Simanggang, Lundu, Serian, (Kanaka), Sarikei, Bau, Simunjan and (Sariiba). The statement also said that in Sabah 16 cases were reported, resulting in two deaths in the only infected district of Tawau.

MOZAMBIQUE

NATIONAL VACCINATION CAMPAIGN AGAINST PREVENTABLE DISEASES

Maputo NOTICIAS in Portuguese 28 Oct 76 p 1

[Text] The mass National Vaccination Campaign is under way in the country, a preventive measure undertaken for the purpose of providing improved health conditions for the Mozambican people by protecting them from the so-called preventable diseases. To date, this campaign, which has been covering the provinces of Cabo Delgado, Niassa and Tete, has already managed to administer a total of 1,086,058 assorted vaccines out of a population goal estimated at 1.1 million inhabitants.

Nearly 5 months after the start of the mentioned campaign, the number of persons vaccinated in those three provinces up to last September were 657,822 against smallpox, 337,586 against tuberculosis (with BCG), and 90,650 against measles. In relation to the number of people that were expected to be reached, the preceding figures show that an average of 99.5 percent of the children were vaccinated with BCG, and 94 percent of the people were vaccinated against smallpox, which constitutes an extraordinary success for the campaign.

Training of Vaccinators in Beira

Meanwhile, the second intensive course for the training of vaccinators intended to continue the campaign in the remaining provinces will be started next 1 November in the city of Beira. The training of about 50 new vaccinators is expected of this course.

Remember that the mass National Vaccination Campaign, whose duration is estimated at 3 years running without interruption, is directed by the National Preventive Medicine Office, and the tasks at the provincial level are coordinated by the respective chief health official, who directs the vaccination brigade headed by the local preventive medicine technician and made up by groups of vaccinators who are health employees.

The campaign, which has been receiving wide popular acceptance, consists in the simultaneous administration of vaccines against tuberculosis, measles and smallpox, this being the first time that it has been done at the national level, as well as the first time that the antimeasles vaccine has been administered en masse.

Political Objective of the Campaign

The objective of this great sociomedical measure, incorporated into the struggle unleashed by the party and government structures against sickness, is to combat vigorously the principal ailments which annually produce

thousands of victims in our country as a result of the lack of minimal assistance and of medical infrastructures which Portuguese colonialism always inflicted on our people.

Implied in the realization of the principle that "health liberates the people," this prophylactic campaign equally represents the profound transformation of the health policy of the country by providing improved health conditions to the large worker and peasant masses, in order that they can respond each time more vigorously to the directives of the Generalized Political and Organizational Offensive on the Production Front, engaging themselves more decisively in the battle for national reconstruction.

Its Duration

Thus, in the course of those 3 years, all youngsters up to 15 years of age will be vaccinated with BCG, all children between the ages of 3 and 6 months will be vaccinated against measles, and all persons over 3 months of age will be vaccinated against smallpox.

On the other hand, once the Niassa brigade has covered that province, it will move to Zambezia for a stay of 68 weeks. The Cabo Delgado brigade will move to Nampula Province, where it will operate for 54 weeks, and the one in Tete will next cover the provinces of Manica and Sofala, where it is expected to remain for 88 weeks. Only at the end of that time will the brigades reach the provinces of Inhambane, Gaza and Maputo, respectively, in order to complete the coverage of the country, which will take place in 1978.

Moreover, the campaign will be followed by an upkeep phase throughout the country because after each brigade completes its task in each province, vaccinations will continue to be administered at the local medical facilities in order to insure continuous and systematic immunization of the people with the scientifically established dosage for each kind of vaccine.

OUTBREAK OF BUBONIC PLAGUE UNDER CONTROL IN TETE PROVINCE

Maputo NOTICIAS in Portuguese 30 Oct 76 p 1

[Text] An outbreak of an extremely deadly epidemic disease, diagnosed by the local medical authorities as bubonic plague, was detected in the district of Mutarara, province of Tete, from the 4th to the 9th of the current month. This terrible illness caused six deaths in the area.

The alerted provincial medical authorities dispatched to the affected area --a district called Uleche--a team headed by the provincial top health official himself and including two Chinese aid doctors, a specialized intern and a laboratory technician.

At the location, the medical team confirmed the clinical suspicion and in addition to the six victims, verified the existence of nine other patients who, according to the clinical diagnosis, showed a "bubonic plague symptomatology."

In view of the situation, two of the patients that still had not been treated were examined, and sanitary measures were determined for the purpose of isolating and eradicating the epidemic illness. The sanitary measures in question consisted of the treatment of all the patients with tetracycline in high doses of 4-6 grains daily, the administration of tetracycline to other residents of the homes of patients, and the protection of the unaffected inhabitants of the area comprising the whole locality of Fanasil. On the other hand, powdered BHC insecticide was sprinkled in all dwellings, on dress clothes and linens, and in rat breeding spots.

Cooperation of the People

In addition to the measures already described, the BHC insecticide was also used in grain and other food warehouses that are accessible to rats, and a sanitary cordon was established to control the movement of the population.

There was extensive participation in these tasks to combat the disease and to prevent its propagation on the part of the whole population of the area and of members of the Popular Liberation Forces of Mozambique, who also proceeded to the unroofing of houses as an anti-rat measure, the clearing of grounds around settlements, and the pick up and burning of all existing trash.

The affected area was subsequently visited by the national director of preventive medicine, who, accompanied by two vermin-control technicians, directed the work to control and combat fleas, an operation which will be repeated in a second phase and be especially incisive in the anti-rat fight, once the population has been protected from the carrier of this disease (flea) by chemoprophylactic means.

The nine patients are recovering, and no other cases have been registered in the location or in the control area, which encompasses a district close to 15 kilometers in diameter, and this, in the opinion of technicians, means that the outbreak is completely controlled.

It is stated that the occurrence of this epidemic disease, which was reported to WHO by the medical authorities of our country, is the result of the lack of minimal assistance and support facilities, or medical infrastructure, which the great majority of our people endured under the Portuguese colonial regime, particularly in the areas of the interior, where, concurrently with the problems of hunger, poverty and nakedness, the masses did not have any medical care.

PERU

TYPHOID FEVER EPIDEMIC IN HUANCAYO

Lima LA PRENSA in Spanish 25 Oct 76 p 7

[Text] Huancayo, 24 Oct--Numerous cases of typhoid fever have occurred in this city because of a "heat wave" and a considerable increase of flies, according to a spokesman of the Hospital Area of Junin.

The proliferation of flies is of such a nature that there is no place in Huancayo that is free of them, and the greatest number of them are in areas close to the Shullcas, Florida and Chilca rivers, which are veritable sources of infection.

The increase of these insects is characteristic of the season, but it is estimated that their propagation has been stimulated by the intense heat experienced during the daytime in the Mantaro Valley and the Central Sierra.

The lack of rain is again being felt after three consecutive days of precipitation. The rains formed small puddles which allowed the flies to hatch.

In view of the numerous cases of typhoid fever among the population, the Hospital Area of Junin has recommended drinking water that has been boiled and avoiding sweets, ice cream and popsicles of dubious origin.

Lima LA PRENSA in Spanish 31 Oct 76 p 22

[Summary] Huancayo, 30 Oct--The population of Huancayo is suffering the effects of a typhoid fever epidemic. Numerous cases have been detected in hospitals and private medical offices of this city.

The announcement was made by Dr Carlos Mendoza Reynoso, the regional health director, who said that vaccinations will be administered in educational institutions to combat the epidemic outbreak.

The Ministry of Health has been urgently requested to supply vaccines to be used in that immunization campaign, which will be administered to the school children and the town inhabitants.

REPUBLIC OF CHINA

OUTBREAK OF INFANTILE DIARRHEA

Taipei CHUNG-YANG JIH-PAO in Chinese 15 Sep 76 p 3

[Text] The incidence of infantile diarrhea has risen recently and over half the emergency cases were so severe they required intravenous injections. Doctors are appealing to heads of households to pay attention to hygiene and not to give children just any old "patent medicine" or "home remedy," so as to avoid infection. The chairman of the general pediatrics department of the Laboring People's Main Hospital, Wang Yu-lin [3076 3022 3829], told a press conference at the hospital yesterday that in the Taipei area during the last month infantile diarrhea accounted for over a fourth of the outpatients and a tenth of the children's emergency cases. Over half the children's emergency cases suffered dehydration requiring intravenous injections. He suggested common sense for heads of households to prevent and treat diarrhea:

Prevention: Stress environmental and personal hygiene. Do not take children aimlessly to public places. Do not thoughtlessly eat raw, cold or unclean food. Do not give children any old "patent medicine" or "home remedy," so as to avoid infection.

General treatment principles: For mild cases of diarrhea you may do the following first. After prohibiting food for 6 to 8 hours, at the more peaceful periods, begin giving powdered milk diluted with three or four parts evaporated milk. If the condition improves within 24 hours, you may gradually increase the density of the evaporated milk. If the condition does not improve or gets worse, you should get the child to the hospital for treatment.

In moderate cases of diarrhea, if the child suffers dehydration and obviously looks sick, you should immediately get him to the hospital for treatment. If the dehydration is severe or the child appears delirious, immediately get him to the nearest hospital for emergency treatment.

THAILAND

HEALTH STATISTICS

Bangkok BANGKOK POST in English 28 Oct 76 p 5 BK

[Text] Fifty-four cases of typhoid in September were among the list of contagious diseases recorded in Bangkok during this year and released by

the city administration yesterday. A total of 754 typhoid cases have been recorded since January. The list placed acute diarrhoea as the worst disease, with 994 cases being admitted to hospitals and clinics since January. Six of these cases died. Of the 994 cases, 85 were reported in September. However, the report said, there had been no cases of cholera so far in Bangkok this year. Third on the list was haemorrhagic fever, with 459 cases recorded in Bangkok since January. There were no deaths from this disease. Thirty-six cases of tetanus, with one death, were listed since January in Bangkok. In fifth place was rabies, with two cases--both fatal.

TOGO

CAMPAIGN AGAINST ONCHOCERCIASIS

Lome TOGO-PRESSE DENEYIGHA in French 19 Oct 76 pp 1, 5

[Text] The campaign against onchocerciasis or "river blindness" will start in Northern Togo in February 1977. At that time, the entire Oti Basin (Oti, Koumongou, Keran, Kara, Mo and their tributaries) will be treated by the program airplanes and helicopters.

The announcement was made in the course of a working meeting by Dr Rene Le Berre, head of the Anti-Vector Campaign Unit of the Onchocerciasis Program. Under the stewardship of Togopharma, this meeting brought together the National Committee for the Onchocerciasis Campaign and Dr Candau, independent president of the Joint Coordinating Committee of the Onchocerciasis Campaign.

The working meeting took place within the scope of preparations for the next session of the Joint Coordinating Committee which will be held in Ouagadougou starting 1 December.

The Ouagadougou meeting is aimed at establishment of a plan of action and a work program for the next year.

During the course of the working meeting, Dr Le Berre commented on the Onchocerciasis Campaign Program.

He said that the goal of this program was to stop transmission of the parasite by killing the vector insect while it is still in larval form. This is accomplished by spreading in the rivers insecticides that are not dangerous to humans, domestic animals and the wild fauna.

Dr Le Berre also indicated that the campaign had started some years earlier in a number of African countries under the aegis of ECCGE, ORSTOM and FED.

Togo is part of a WHO program encompassing seven African nations, viz. Mali, Ivory Coast, Upper Volta, Ghana, Niger, Nigeria and Togo.

Dr Le Berre added that the campaign which had started in Upper Volta, Mali, Ivory Coast and Ghana in 1975 had yielded very satisfactory results up to the present.

Coming back to the campaign in Togo, the head of the Anti-Vector Campaign Unit specified that at this time the entomological evaluation sector of Lama-Kara and Dapaon is gathering the data required prior to treatment.

Dr de Medeiros, technical counselor to the minister of public health and social welfare, pointed out the serious handicap that is constituted by onchocerciasis in connection with our economic development.

Dr de Medeiros also mentioned the delay in the development of the program in Togo. "We are sorry to see that the 1973 interim project appears to have bypassed our country completely and concentrated its activities essentially in the neighboring countries.

"We dare to hope that, because of the intervention of President Candau vis-a-vis the Joint Coordinating Committee, the sponsoring organs and the WHO executive agency, activities aimed at controlling simulia and parasitological studies will be intensified in Togo along with the chemotherapy campaigns in the first 6-year phase of the program from 1974 to 1979."

Dr Candau briefly mentioned the campaign against onchocerciasis. It is divided into three phases and covers an area of 700,000 square kilometers.

In opening the proceedings of this working meeting in the name of the minister of public health and social welfare, Dr Kodjo Nathaniels, director general of public health and social welfare, described onchocerciasis.

He discussed the socioeconomic and health implications of the disease of which "blindness is the most feared individual and also general complication (exodus of rural population groups who, because of the fear of 'river blindness,' abandon the fertile lands of our valleys, basins and forests, which greatly affects our socioeconomic development)."

Dr Nathaniels emphasized that in the Togo of the new regime, where all the activities of the Guide, General Gnassingbe Eyadema, are geared to the development and promotion of humanity, any sacrifice is justified to achieve the success of this campaign program both in this country and in all the other areas of the Volta Basin.

Finally, the representative of the minister of public health paid homage to Dr Candau, to the neighboring countries and to the international

institutions which have contributed to the realization of the campaign against onchocerciasis in the Volta Basin.

TURKEY

KONYA INFLUENZA EPIDEMIC

Istanbul AKSAM in Turkish 26 Oct 76 p 5

[Text] The Konya influenza epidemic is gradually spreading. Appearing at first in the form of a backache, the illness then develops according to the usual pattern of influenza. During the course of the illness, stomach pain and vomiting are observed. The number of people afflicted by this particular influenza, which lasts longer than the usual and affects the victims for 15-20 days, is growing. The influenza epidemic has had a particular impact on the price of lemons which now sell for as much as 2TL apiece [16.5TL = \$1].

INTESTINAL INFECTION EPIDEMIC

Istanbul MILLIYET in Turkish 24 Oct 76 p 10

[Text] Dr Erdal Atabek, speaking at a convention of the Turkish Physicians Union, stated that in various areas of the country acute intestinal infections have reached epidemic proportions. Atabek, at this point, criticized the increase in the price of pharmaceuticals which is to be effected in the near future.

USSR

A NEW BATCH OF EFFECTIVE INFLUENZA VACCINE RECEIVED

Leningrad LENINGRADSKAYA PRAVDA in Russian 2 Oct 76 p 2

[Article by T. Chesanova]

[Summary] "Physicians are already preparing for one of their most rigorous 'hand-to-hand' battles, the fight against influenza," which rarely fails to strike Leningrad in the wintertime, "as well as most other densely populated areas. Hong Kong, Scottish, Japanese influenza--the names change, but the fact remains, hundreds of people are stricken."

"This year, for the first time, an amazing product will come to their assistance. Its efficacy is 4-8 times higher than products used heretofore."

At work yesterday, Lyudmila Konstantinovna Malafeyeva, head of the gamma globulin shop, "was well aware of how much people needed the anti-influenza product developed by a complex method from donor blood. Incidentally, it is produced only in the Soviet Union, mainly in Leningrad, at the Bacterial Product Enterprise of the Institute of Epidemiology and Microbiology imeni Pasteur."

"As usual, L. K. Malafeyeva was filling out the certificate for the new batch of gamma globulin." "But on the line where the number of units of anti-influenza antibodies contained in the product is shown, an unusual figure appeared--3,200. Heretofore, there was always another figure on this line, a much smaller one, 800." This meant that the product completed yesterday was much stronger in its therapeutic effect. Experiments have shown that it could be eight times more effective than previous ones.

Yesterday was an unusual day at the gamma globulin shop, for more than its employees. Two phone calls were made to report readiness of this product, one to Ye. A. Slatin, director of the enterprise, and E. A. Fridman, head of the laboratory of respiratory viral infections.

There was considerable work preceding this good news. LENINGRADSKAYA PRAVDA had already reported on the joint work of scientists in three institutes of Leningrad--Nuclear Physics imeni B. P. Konstantinov, Polytechnical imeni M. I. Kalinin, and Epidemiology and Microbiology imeni Pasteur--concerning the development of the anti-influenza vaccine. This work was also mentioned at the 25th party congress.

"It was a matter of developing an inactivated vaccine, unlike a 'live' one, in that it was made of killed viruses purified in a unique manner." It produces a marked increase in anti-influenza antibodies and stable immunity after administration.

Every effort is being made to expedite both commercial manufacture of the new vaccine and to help the public as quickly as possible. The new more effective gamma globulin is produced from blood of donors already inoculated with the new vaccine.

"The Main Sanitary and Epidemiological Administration of the RSFSR Ministry of Health issued an order allowing inoculation of 4,000 donors with killed influenza vaccine." In the early days of initiation of mass immunization with the new vaccine, the institute was visited and the procedure for inoculation was much simpler.

"This is now done by a needle-less method, using a special device, the so-called injector." "And because the activity of the vaccine is very high, it can be administered only once a year, rather than every 2 months, as before, reports N. G. Bundzen, a physician in the donor department."

"People who are aware of the importance of giving blood merit the deepest respect. And many reasons are given for wanting to give blood."

"Several more batches are being prepared for release." Ten years ago, the first gamma globulin was produced at the same institute, and it gained universal recognition. "The tiny ampules of the new product are priceless--what could be more important than a human life saved!"

VENEZUELA

TUBERCULOSIS VACCINATION IN LARA

Caracas EL NACIONAL in Spanish 13 Oct 76 p D-8

[Text] Barquisimeto, 12 Oct--A massive tuberculosis vaccination campaign has been started in the state of Lara, beginning with the regions of Urdaneta district, according to Dr Douglas Cordero, pneumonologist of the Ministry of Health and Social Welfare [SAS].

We are starting in Urdaneta district because it is one of the sections of Lara most affected by this disease and also because of its scattered population. We will continue in Torres district, and the campaign will finish in Iribarren district, explained Dr Cordero. In the state of Lara, according to SAS statistics, there are some 500 cases of tuberculosis, and the mass vaccination is expected to be finished by mid-November. The campaign is being financed by the Health Commission and the State Antituberculosis League.

We recommend that the people give their utmost cooperation to the vaccination teams which have begun the campaign today, said the pneumonologist.

INFANT MORTALITY DROP LINKED TO MASSIVE VACCINATION

Caracas EL UNIVERSAL in Spanish 13 Oct 76 p 1-19

[Text] The mass vaccination programs carried out by the Ministry of Health and Social Welfare [SAS] throughout the country have been one of the principal factors in the decline in infant mortality.

According to figures made public by that office at the Fifth Venezuelan Congress on Public Health being held in Caracas, SAS technicians have

been studying the reasons for the reduced infant mortality rate and the increase in life expectancy of Venezuelans.

The chief conclusion is that one factor is massive vaccination against diseases which are preventable by this means.

They cited the case of measles, against which vaccinations rose by 75 percent as compared with 1973. There was also a 53 percent increase in vaccinations against tetanus, the program being doubled in those rural areas where there is a high incidence of tetanus among newborn infants. For this reason, all women between the ages of 10 and 45, years in which pregnancy is possible, have been vaccinated.

The source also cited as a very positive indication the increase in polio vaccination, with a coverage of nearly 90 percent of all children in a house-to-house vaccination campaign.

In the case of smallpox vaccination, it was explained that the last cases of smallpox in the country were found in 1956. However, the smallpox vaccination program is being maintained because of the constant possibility that countries bordering Venezuela might have infected areas.

Finally, the report cites the intensive BCG [bacille Calmette Guerin] vaccination program, carried out according to the most stringent international requirements, which has effectively reduced the incidence of illness and death from tuberculosis. In addition, it has been statistically proved that children vaccinated with BCG are partially protected against leukemia, malignant and lymphatic tumors and leprosy.

The Ministry of Health hopes to conclude this year with a total of 5.2 million children protected with BCG throughout the country, including the federal territories of Amacuro and Amazonas, whose populated areas are most difficult to reach.

HEALTH SERVICES TO BE CENTRALIZED

Caracas ULTIMAS NOTICIAS in Spanish 20 Oct 76 p 6

[Article by Coromoto Alvarez]

[Text] Yesterday, the Council of Ministers approved a decree intended to create the National Health Services Coordination System, which will be under the direction of Dr Antonio Parra Leon, minister of health and social welfare.

This is the first phase in the centralization of the health services, which to date have not provided the assistance that the people expect on account of their dispersion. The centers of Social Security, the Ministry of Health and the Welfare Board will be consolidated.

Following are other matters discussed at the cabinet level yesterday:

Today's session of the cabinet first of all heard the report of the last extraordinary meeting of the Economic Cabinet, and then proceeded to consider the items on the agenda, in which four subjects of special interest stand out.

The first of these would be a final revision of the Water Bill, which opportunely will lead to the nationalization of waters in Venezuela. After the enactment of that law, once it has been considered and approved by the National Congress, all waters, whatever their source, state or location and whether surface, underground, fossil or thermal, will be considered to be stages of the same cycle, and their regulation will be subject to the same legal principles. By virtue of that law, all waters will be considered to be property in the public domain of the nation.

The decree that creates the National Health Services Coordination System, which practically provides for the first of a series of three phases to end with the integration of the health services of the Venezuelan Social Security Institute, was also approved today. That is the goal: the existence of a single health service, of a unified health service in the country.

Today's session of the cabinet also discussed and approved a decree to designate the executive board of the foundation of the Center for Biological Studies on the Growth and Development of the Venezuelan Population (FUNDACREDESA). That executive board will be chaired by Dr Hernan Mendez Castellanos, and its members will be Doctors Mercedes Lopez de Olavarria, Guillermo Tovar Escobar, Maria Carmona de Chacon and Marucha Senior de Ponce.

And, finally, the proposal to restructure the Simon Bolivar Center, submitted by the governor of the Federal District and president of the institution, was taken into consideration. This afternoon, Gov Arria will fully inform the news media in his office about the restructuring of the Simon Bolivar Center that he submitted to today's session of the cabinet.

Aside from this, the meeting of the Council of Ministers on this date considered the routine matters that are incumbent upon the cabinet under the constitution and the law. Additional credits, budgetary amendments, overdrafts, requests for unallocated funds, and so forth were also approved.

VENEZUELA ACCEPTED AS TROPICAL DISEASE RESEARCH CENTER

Caracas EL NACIONAL in Spanish 21 Oct 76 p C-3

[Text] Dr J. A. Padilla Fernandez, general director of the Ministry of Health and Social Welfare, announced that the 24th meeting of the Executive

Council of the Pan-American Health Organization (PAHO) unanimously decided to accept Venezuela as the center for research and training on leprosy and other tropical diseases.

The decision was made upon consideration of the study presented by the Venezuelan delegation, in which an account is given of the work performed during 15 years by the Pan-American Center for Research and Training on Leprosy and Tropical Diseases, which operates in Caracas.

This center has been accepted as an associate institution of the PAHO, but independent of the Venezuelan Government and provided with its own management and resources, explained Padilla.

He mentioned that during this meeting, which convened in Mexico for 15 days until last week, there was a lengthy debate among the delegates concerning the proposal to discontinue the use of the noun leprosy and the adjective leprous in connection with this disease, which at this time is viewed in a different light and its treatment conducted without confinement. It was proposed to call it the Hansenian disease. Such proposal was turned down because the latter term still is not very generalized, and it could create some confusion.

Another suggestion approved at that meeting was the elimination of anti-smallpox vaccination certificates as a requisite for persons traveling between countries where that disease has not existed for many years, as the result of immunization and sanitation campaigns. The antismallpox certificates will be required only for such places as India and Pakistan, where smallpox cases occur every now and then. The reason for eliminating this type of vaccination is to avoid some incidental risks that have been uncovered.

As to the center for leprosy and tropical diseases, said Dr Padilla, Venezuela will be at the service of various American countries, including Costa Rica, Puerto Rico, Colombia, Brazil, Trinidad-Tobago and other members of the PAHO.

The meeting discussed the growth in research on Chagas' disease and malaria. It was decided to ask the general director of the PAHO to request the general director of the WHO to provide facilities and resources for the programs on tropical diseases and the prevention and control of Chagas' disease, which has become the greatest public health problem because it causes many cardiac ailments. There was general agreement that the resources of the PAHO be dedicated to programs of diseases that constitute public health problems (malaria, Chagas' disease, etc.) because they can be transmitted from one country to another.

Another item on the agenda was the approval of the admission of Surinam to the Executive Council of the PAHO. The proposal was made by the Venezuelan delegation in recognition of the new independent country.

The Venezuelan delegation consisted of Doctors Jose Antonio Padilla Fernandez (general director of health and social assistance), German Figueroa, Padilla Lepage, Jacinto Convit and Lopez Vidal.

WRONG DIAGNOSIS REVEALED IN 'TYPHOID' CASES

Caracas EL UNIVERSAL in Spanish 22 Oct 76 p 1-22

[Text] Doctors of the El Valle Medical Unit were mistaken when they diagnosed as typhoid the 15 cases of fever detected in families residing in the San Andres Building, on Sordo and Pelaez streets, Santa Rosalia Parish, said Dr Humberto J. Florea, health commissioner of the metropolitan area, during a press conference yesterday.

"There is no epidemic outbreak of typhoid fever in the metropolitan area," emphasized the high official of the Ministry of Health. The Public Health Commissioner's Office ordered the suspension of vaccination of the residents of the building in question, eliminated the sanitary cordon and took off the notices on the walls of the building giving information about the water, gatherings, vaccination schedules and assistance centers to report to in case of fever. The notices were posted by the El Valle Medical Unit.

Typhoid fever is of intestinal origin and is caused by the bacillus known as Salmonella typhosa. The symptomatology starts with general indisposition, state of stupor, lack of coordinating capacity, headache and fever.

"Dr Flores, the Maldonado family of the San Andres Building disclosed that the diagnosis of the clinic regarding their 9-year-old son had been typhoid fever. What do you think of that?" asked a reporter.

"I have no official notice," said the health commissioner. "Up to this time," he added, "the 15 cases in question have been subjected to Widal's reaction, a hemoculture. This test, which will take another 8 days, will have to be repeated. At the end of that time, we will surely know the exact diagnosis. There are more than 40 pathological processes that can arise from a febrile syndrome, such as hepatitis, typhoid and amebiasis, among others."

In discrediting once more the doctors of the El Valle Medical Unit, Dr Humberto J. Flores pointed out "that they committed an irresponsible act when they labeled those fever cases as typhoid."

"Why did you order the vaccination suspended?"

"The incubation period of Salmonella typhosa takes between 8 and 12 days, and the vaccine acts with a delay of 8 days after appearance of the disease. In this presumed case, one would be vaccinating a person who is already sick."

"If you do not know the diagnosis after 15 days have elapsed, why do you deny that it is typhoid?" asked a radio reporter.

"You prove it to me that it is typhoid," answered Dr Flores. "I also wish to point out," he continued, "that these febrile conditions have not produced any deaths to date."

VIETNAM

PREVENTION OF JAPANESE B-TYPE ENCEPHALITIS OVER 10-YEAR PERIOD

Hanoi Y HOC VIETNAM in Vietnamese No 1, Jan-Feb 76 pp 13-20

[Article by Do Quang Ha, Nguyen Van Man and CTV]

[Text] I. Infection by Japanese B Encephalitis Virus in North Vietnam

In North Vietnam, from April to September each year, children often contract a malignant syndrome called "acute brain disorder syndrome." The disease can break out anywhere and sometimes is limited to areas where litchi is grown in large quantities. In these localities, when the season of ripening of the litchi fruit arrives, many species of birds normally appear and afterwards encephalitis appears among children.

According to statistics provided by the Institute of Hygiene and Epidemiology, the annual incidence of acute brain disorder syndrome among children in North Vietnam was as follows:

1972:	4,122 cases of encephalitis, with 818 deaths
1973:	955 cases of encephalitis, with 115 deaths
1974:	4,146 cases of encephalitis, with 925 deaths

Figure 1 below shows the number of children having the syndrome and the number of deaths among them in North Vietnam in 10 years, from 1961 to 1971.

The clinical symptoms show the following major conditions: children are alert and healthy, but suddenly have high fever, coma and convulsions. If the conditions are bad, the coma gets deeper and deeper, which can be followed by death. In many cases, if the children recover, they still bear serious mental and nervous aftereffects. The cause of this malignant syndrome in our country has mainly been determined as Japanese B encephalitis virus. For the first time in 1964 we isolated four Japanese B encephalitis virus strains (4, II). Since then, we have found 18 strains (see Table 1).

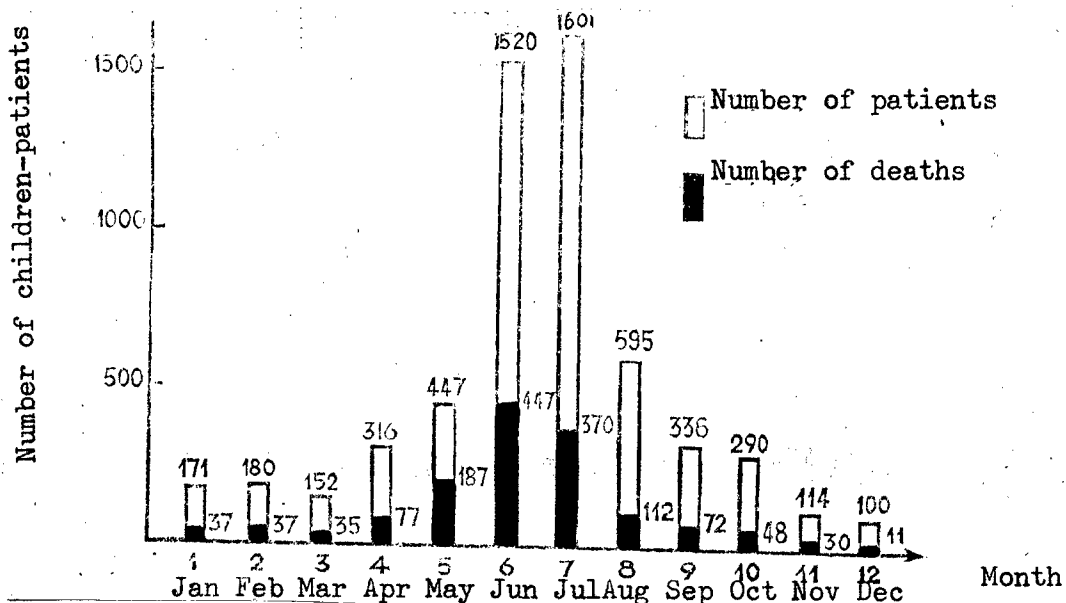


Fig. 1. Number of children having the acute brain disorder syndrome and mortalities in different months in North Vietnam from 1961 to 1971.

Table 1. Japanese B Encephalitis Virus Strains Isolated in North Vietnam

Year of isolation	Strain isolated	Isolated from
1964	HN-60	Patient's blood
	HN-51, HN-59	Patient's brain
	LD-68	Garrulax perspicillatus--Gmelin
1965	HN-145C)
1966	QN)
1967	B-67) Patient's brain
1968	B-68)
1971	HN-CT-304, HB-CT-305 and	
	HN-CT-310	Culex tritaeniorhynchus
1974	DP-493, GB-494, TS-502	Patient's brain
1975	BT-CT-548, BT-CT-549	Culex tritaeniorhynchus
	BT-A-552	Aedes (Sp) diemmacus
	TH-L-560	Hog

The HN-60 strain was found in the blood of a 10-year-old patient in Dong Anh, Hanoi, in 1964. The LD-68 strain was found in the internal organs of the lieu dieu bird (*Garrulax perspicillatus*--Gmelin), which was caught in an area of litchi growing in Thanh Oai, Ha Tay Province, in 1964. Five Japanese B encephalitis virus strains--HN-CT-304, HN-CT-305, HN-CT-310, BT-CT-548 and BT-CT-549--and two other strains--5-71 and 9-71 (still unclassified)--were found in the mosquito *Culex tritaeniorhynchus*. The

BT-A-552 strain was found in the mosquito *Aedes (Sp) diemmacus* and TH-L-560 in a hog having the acute brain disorder syndrome. The nine remaining strains were all found in the brain of children afflicted with encephalitis. The above strains (except two, 5-71 and 9-71) were determined as Japanese B encephalitis viruses having characteristics such as being capable of escaping through super filters, being destroyed by ethylic ether and natriumdeoxycholate and, when injected into the brain and abdominal cavity of white mice, infecting and killing them. The viruses can multiply in a number of cell cultures, have maximum value of red blood cell agglutination within the pH limit of 6-6.2 and, in the cases of the strains isolated in 1974 and 1975, have the maximum pH agglutination of 6.8. The above-mentioned strains do have all of the immunity characteristics similar to those of the classical Japanese B encephalitis virus strains such as Nakayama, JBE-47, PI, etc.

To further determine the characteristics of the isolated viruses, in addition to the presentation above, we also conducted studies of the shapes and multiplication of these viruses in the kidney cell culture of chuot dat [*Bandicota indica*] by means of electron microscope.

The results of our studies showed that when the viruses were attached to the cell, viruses were found close to the cell membrane 60 minutes later.

Three hours later, viruses appeared in the protoplasma of some cells, while almost all other cells did not show any special changes. Within 3-4 days, almost all cells showed degeneration or detached themselves from the flask wall. In the pictures obtained by an electron microscope, we found that the viruses had multiplied themselves at a high rate. They had clumped together in large clusters or had scattered in the cell protoplasma. As to their shape, they were found to be round, with the overall diameter including the outer shell being 35 nm and the diameter of the core 30 nm. In addition to the fully developed viruses there were under-developed ones which were hollow and also clumped together in clusters.

Observation under an electron microscope showed that the Japanese B encephalitis viruses had multiplied in the chuot dat kidney cell culture and the high rate of multiplication coincided with the phenomenon of cell degeneration. This multiplication was also in agreement with the observations by Ota and Filshie.

Using serum reactions such as complementary association, antiagglutination of red blood cells and neutral reaction, since 1960 we have tested so far thousands of serums taken from children having "acute brain disorder syndrome." The results show that the rate of positive tests with Japanese B encephalitis virus antigen accounted for 42-67 percent (see Table 2).

In addition to the Japanese B encephalitis virus, we believe that there might be other causes of the "acute brain disorder syndrome."

Table 2. Results of Double Serum Tests of Children-Patients Having "Acute Brain Disorder Syndrome" by Anti-Red Blood Cell Agglutination Reaction

Year	Number of double serums	Rate of positive results with antigen		
		Japanese B encephalitis % (+) \pm m	Spring summer Russian encephalitis	Western equine cerebrospinal encephalitis
1964	55	60 \pm 6.603	(-)	(-)
1965	37	67.5 \pm 7.70	(-)	(-)
1966	14	28.5 \pm 12.06	(-)	(-)
1967	68	48.5 \pm 6.06	(-)	(-)
1971	43	25.58 \pm 6.653	(-)	(-)
1972				
1973	77	42.85 \pm 5.639	(-)	(-)
1974				

The Japanese B encephalitis has a high rate of latent infection. Using anti-red blood cell agglutination reaction with specific antigens, from 1964 to 1974 we investigated 6,826 serum specimens taken from healthy people of various age groups who lived in different areas. The results show that, depending on localities, the percentage of positive serums with Japanese B encephalitis antigen ranged from 38.44 to 82.94 percent (see Table 3).

Table 3. Results of Investigation of Serums From Healthy People With Japanese B Encephalitis Antigen in Period From 1964 to 1974

Year	Locality	Total number of serums	% serum (+) with Japanese B encephalitis antigen and average antibody value	
			% (+) \pm m	Average antibody value (reversed figures)
1964	HD, HP, TB, TH, YB	1,591	81.14 \pm 0.979	40.66
1965	TB	580	48.62 \pm 2.074	29.34
1967	TQ	129	82.94 \pm 3.310	35.23
1968	TQ	206	61.16 \pm 3.395	22.05
1971	BT, HB, HP	276	52.53 \pm 3.004	35.57
1972	BT, HB, HN, HT	1,121	38.44 \pm 1.453	24.14
1973	BT, HB, TH	1,575	51.49 \pm 1.257	32.82
1974	HB, QN, TH	1,348	49.70 \pm 1.361	32.10

The rate of natural infection by the Japanese B encephalitis virus in people of the 1-19 age group in four geographical areas of North Vietnam and in 8 years, from 1964 to 1974, varied on the average from 45.67 to 52.47 percent (see Table 4).

Table 4. Rate of Infection by the Japanese B Encephalitis Virus Among People 1-19 Years of Age in Four Geographical Areas of North Vietnam (From 1964 to 1974)

Children 1-19 years old	Coastal	Delta	Piedmont	Highlands
Number of serums under investiga- tion	471	2,218	1,329	1,254
% (+) \pm m	50.74 \pm 2.303	52.47 \pm 1.06	45.67 \pm 1.366	52.07 \pm 1.41
Average antibody values (reversed figures)	38.60	26.78	27.59	29.51

As to age groups, we observed that the younger the children were, the less contact they would have with the Japanese B encephalitis virus. In the course of their lives, human beings gradually have contact with and develop an immunity to this virus, which explains why we encountered only among children the Japanese B encephalitis (see Table 5). This notion did not apply to foreigners from other continents; for instance, according to Puyuelo and Prevot, in 1953 there were in North Vietnam 98 North African soldiers in the French Expeditionary Corps who contracted the disease. In past years, by using serum reactions, we confirmed a small number of cases of Japanese B encephalitis among the Russians, Germans and French working in Vietnam.

Table 5. Rate of Natural Infection by Japanese B Encephalitis Virus Among Different Age Groups (From 1964 to 1974)

Age group	Total number of serums	% (+) with Japanese B encephalitis antigen and average antibody value (reversed figures)	
		% (+) \pm m	Average antibody value
1-4	1,311	35.92 \pm 1.325	18.82
5-9	2,210	51.80 \pm 1.062	29.92
10-14	1,378	58.20 \pm 1.328	34.34
15-19	373	65.68 \pm 2.457	35.66
Over 20	1,554	77.28 \pm 1.062	46.11

The major carrier of Japanese B encephalitis is the mosquito Culicinae. In 1971, for the first time in Vietnam we were able to confirm this carrier of the disease. We found three strains--HN-CT-304, HB-CT-305 and HN-CT-310--and this year of 1975 we found two others--BT-CT-548 and BT-CT-549--from the mosquito Culex tritaeniorhynchus, which we captured in areas of hog sties and family-run animal-raising areas. This type of

mosquito has these characteristics: It makes up a large population during the warm months; likes to suck blood of domestic animals (hogs); lives during the day in the bushes in backyards, at night enters sties and stables, and houses, to look for blood to suck; and likes to lay eggs in ricefields and ditches.

In 1975, we also succeeded in isolating a Japanese B encephalitis virus strain, BT-A-522, from the mosquito *Aedes (Sp) diemmacus* in Diem Mac, Dinh Hoa-Bac Thai. Caught in a forest, it was a kind of mosquito that had not been mentioned in our country. We are continuing our research with other species of mosquitoes.

As to the virus sources, we isolated in 1964 the strain LD-68 from the lieu dieu bird [*Garrulax perspicillatus*--Gmelin] living in its natural environment and found 8 of the 14 species of game birds to be carriers of the Japanese B encephalitis antibody. This confirmed that wild birds are carriers of the virus.

The animal that supplied the virus to the carrier and helped to spread the Japanese B encephalitis epidemic was the hog. In 1970, we made an investigation of hog serums and found that the percentage of hogs carrying the Japanese B encephalitis antibody was 64.23 percent, with the average antibody value being 1/1224.

If we considered individual areas in specific periods of time, the percentage of hogs showing positive results was very high in many localities, from 97.41 to 100 percent of hogs being infected by the Japanese B encephalitis virus, and in 1975 we succeeded in isolating the virus strain TH-L-560 from an infected hog in Thanh Hoa. As to the other domestic animals such as chickens, ducks, geese, dogs, water buffaloes and cows that also carried the Japanese B encephalitis antibody, the percentage ranged from 42.85 to 56.52 percent.

Based on the above-mentioned results, we believe that North Vietnam is a natural pocket of contagion of the Japanese B encephalitis virus. This virus seems to exist everywhere, in the wild birds, anthropod insects which transmit it to domestic animals, a few hogs and the mosquito *Culex tritaeniorhynchus*, which sucks blood of hogs which already carries the virus and transmits it to other hogs, hence, a quick and great increase of the number of hogs who are carriers of the virus; it is at this point that we begin to have infection in human beings by the Japanese B encephalitis virus, with a number of children contracting the disease typically having full clinical symptoms.

II. Prevention and Japanese B Encephalitis Vaccine Made From Cell Culture

After we found in 1964 that the Japanese B encephalitis virus was the major cause of the summer "acute brain disorder syndrome," research work was conducted in order to produce a specific vaccine to prevent this disease. In

1965 we studied production of such a vaccine from chicken's blastomere, but the strength of the vaccine was low. Then we studied the semirefined vaccine made from the brain of white mice. But since this vaccine had the risk of causing vaccinal encephalitis and the scope of its use was limited, we selected a type of cell suitable for the Japanese B encephalitis virus to thrive on: we cultivated kidney cells of hogs and chuot dat. The viruses grew nicely and the vaccine made from these two kinds of cell cultures was highly effective. In 1970, basic knowledge in the studies of the Japanese B encephalitis vaccine was obtained and we produced many batches of vaccine which we tried on human beings. In 4 years, from 1971 to 1974, we organized experimental prevention of the disease by vaccination in many localities in Ha Bac, Bac Thai, Hanoi and Haiphong of children from 1 to 10 years of age, with either subcutaneous or cutaneous injection (see Table 6).

Table 6. Antibody Changes After Injection of Japanese B Encephalitis Vaccine

Injection	Locality	Number of children who	
		Gave double serums	Showed antibody increase due to vaccine injection % \pm m
Subcutaneous	Bac Thai	126	74.60 \pm 3.87
	Ha Bac	190	72.10 \pm 3.25
	Total	316	73.10 \pm 2.49
Cutaneous	Haiphong	18	55.55 \pm 11.70
	Bac Thai	63	69.84 \pm 5.78
	Ha Bac	251	66.93 \pm 2.96
	Total	332	66.86 \pm 2.58
Comparison	Bac Thai, Ha Bac	87	13.78 \pm 3.69

Table 6 shows the antibody changes that prevented red blood cell agglutination among 648 children who had been vaccinated against Japanese B encephalitis. Following the injections, the percentage of children receiving the vaccine by subcutaneous injection who showed an increase of antibodies was 73.10 percent, and by cutaneous injection 66.86 percent. This difference, according to statistics, was not at all clear because $\chi^2 = 2.990$.

After 4 years of using Japanese B encephalitis vaccine in the above-mentioned localities, the overall percentage of protection provided by the vaccine was 72.3 percent (see Table 7).

In addition to vaccination, it is necessary to spray insecticide to kill mosquitoes in stables, particularly hog sties and houses, and to urge practice of collective and individual hygiene.

Table 7. Results of Protection by Japanese B Encephalitis Vaccine in Bac Thai, Ha Bac, Hanoi and Haiphong From 1971 to 1974

<u>Group getting vaccine and comparison</u>	<u>Total number of children</u>	<u>Number of children*</u>	<u>% over 100,000</u>	<u>Protection comparison</u>	<u>Protection percentage</u>
Number of children getting vaccine	96,810	22	22.72	1/3.60	72.3%
Number of children getting no vaccine	1,622,192	1,327	81.80		

*Children who showed "acute brain disorder syndrome."

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WEST GERMANY

ESSEN VIROLOGIST DEVELOPS, TESTS RABIES VACCINE

Bonn DIE WELT in German 19 Oct 76 page number not given

[Article by Walter Giott]

[Text] Ernst Kuwert, a virologist and professor at the Essen Clinic, and Germany's No 1 rabies expert, survived his auto-experiment. He then injected his coworkers with the mixture of embryonic lung cells and killed virus and vaccinated a helper working on development. Some 4 weeks ago, Andrea-Gwendolin and Simon-Martin Scheel, the president's children, were successfully treated with this "new wonder weapon" against rabies.

After 15 years of research, Kuwert is now sure that "we have developed the rabies vaccine of the future." In Thailand, the 44-year-old physician had watched wizened men frothing at the mouth, dying in agony. He could not help. He could not forget "the pictures which were shocking even to me." In Teheran, Kuwert saw a German mechanic die of rabies. "It was only a few hundred meters from the Congress Hall of the Iranian capital. UNESCO was in session on a program dealing with worldwide dangers of rabies."

Kuwert said that "the German Federal Republic is the most affected area in Western Europe." Between Flensburg and Fuessen, there are annually 3,000-5,000 persons who must be given the painful vaccine because they have been bitten by rabid foxes, dogs or cats. Six to eight of them actually die.

To date, immunization against rabies was a torture for the infected individual. There was only one remedy for the disease: Louis Pasteur developed it. The lethal viruses, which are only one-millionth of a millimeter in length, were cultivated in the brain cells of sheep and rabbits, killed and the tissue mixture was injected into the area around the navel. Kuwert: "One out of every 1,700 patients suffered paralysis of the central nervous system as a side effect of immunization." But it was the only measure. In 1973, the Federal Health Office prohibited the use of the vaccine: "The risk is greater than the benefit."

Since that time, physicians have been allowed to inject only one vaccine, which was obtained from duck embryo cells. This method of rabies treatment is currently still used in almost all German medical practices and it is very painful: For 14 days, the patient receives a daily injection next to the navel. The abdomen frequently swells between the fifth and ninth days.

The new rabies product from Essen has no side effects. Kuwert, who is a member of the Vaccination Commission of the Federal Health Office, discovered it after "he had experimented with 15 animal and human tissue cells."

Working in conjunction with colleagues at an American research institute, the German virologist tested mouse kidneys, chicken embryos, rabbit and dog brains as a nutrient medium for the viruses. The professor achieved the best results from the lung cells of unborn children made available to him by the Clinic Gynecology Department. Kuwert states "the pulmonary tissue from two fetuses provides sufficient nutrient medium for an entire year's production of rabies virus."

The investigator discussed his results to date in his work room on the ground floor of the clinic: "We vaccinated 800 children and adults with the new tissue vaccines. No one complained of side effects, no one had any pain. In one case, immunity has persisted for 3 years." He discussed the reasons: "Our vaccine consists of 90-percent viral proteins and only 10-percent tissue cells. The tolerance and effectiveness has therefore been multiplied. Moreover, we do not give the injections as often; the dose is smaller and administration is not into the abdominal area." The rabies vaccine developed in Essen is given in the form of six injections in the upper arm over a period of 3 months.

Kuwert cites a group of 160 adults and children from Detmold in East Westphalia as evidence that rabies immunization with his product presents no problems whatsoever. Some 2 weeks earlier, students, teachers and parents had come in contact with a rabid tomcat. Kuwert immediately organized a mass vaccination campaign. Those who knew of the pain involved with the old method were reassured by him: "A little prick in the upper arm, it doesn't hurt any more than a flu shot." Next week, the third series of immunizations will be administered in Detmold.

Despite the now painless treatment, the Essen virologist warns against underestimating the disease. Whoever is bitten or scratched by an animal suspected of having rabies should consult his physician immediately. According to Kuwert, even horses can transmit rabies. They don't even have to kick to do so.

ZAIRE

DEATHS IN ZAIRE FROM UNIDENTIFIED DISEASE

Dakar AFRIQUE NOUVELLE in French 20-26 Oct 76 pp 16-17

[Text] All of Central Africa has been trembling in recent months. An as yet unidentified and pernicious disease, which appeared in the Sudan where it caused major damage, has crossed the borders into this country where its destruction continues.

The fear is not limited to the peoples of these areas. Concern has also spread to the international medical milieu and, in particular, to WHO.

For several weeks, this disease has been termed mysterious even by the most responsible experts. The specialists have actually been defenseless against this disaster, not knowing where to turn to arrest the terrible scourge.

Figures? The disease has already stricken a number of persons in the southern Sudan. At Maridi, 31 out of 54 persons died. At N'Zara, there were 15 victims out of a group of 23.

The physicians have of course not been inactive. Investigations were undertaken and WHO some time later announced that the virus was under examination "in a high-security laboratory somewhere in Europe."

To date, information has been limited to the symptoms. The disease sets in with a high fever, which is soon followed by convulsions and vomiting of blood. The course is very rapid, resulting in a state of shock and renal involvement.

While in the Sudan there was a definitive total of 80 deaths, in Zaire, according to reliable sources, there were at least 800.

Apart from that, to avoid the further spread of the disease, the early measures taken by physicians consisted of quarantining the stricken areas. Patients had to be isolated from those who had not had any contact with them. Hence, villages were "improvised" which harbored only patients.

Isolation had to be absolutely complete. In other words, all forms of transportation between these villages and the remainder of the country had to be shut down.

This is why the minister of health of a neighbor country of Zaire was able to reassure his fellow citizens, "No sign or symptom of this disease has so far been detected in the country and there is no reason for alarm."

Even in Brussels, to avoid any possibilities [of spreading the disease], passengers coming from Central Africa were subjected to a thorough medical examination upon arrival at the airport of the Belgian capital. In Kinshasa, a Belgian physician in the employ of Sabena Airlines prevented the departure for Europe of any disease suspect.

Limited Area

As a matter of fact, Kinshasa was scarcely threatened. According to the experts, the area of infection was limited to the town of Yambuku, more than 1,000 kilometers to the northeast of the Zaire capital.

The medical team sent by the Zaire Government after the contaminated area had been delineated found that the virus was "fragile, i.e., it was not resistant to the elementary measures intended to check its spread."

Before identification of the virus, the specialists had taken a number of blood samples both from patients and persons who were not stricken but who might have resisted the virus because they lived in the area of infection. According to medical hypotheses, analysis of the blood of the latter group might result in the isolation of an antibody that could help investigators develop a vaccine.

The Royal Institute of Tropical Medicine in Antwerp and the Institut Pasteur in Paris are making every effort in this direction. In addition to these two institutions, tropical medicine laboratories in the United States and Great Britain are also working on the matter.

After several weeks of investigation, the investigators found that the mysterious disease that had taken so many human lives in the Sudan and Zaire was caused by a virus transmitted to humans by a green monkey known as Ethiopian Cercopithecus. The researchers concluded that the disease is a variant of Marburg disease.

This West German city is sadly notorious because the original form of the disease that occurred in the Sudan and Zaire was discovered there in 1967. Marburg disease had caused the death of seven scientists who were handling extremities of green monkeys brought from East Africa.

Since that time, the procedure used to save those stricken with Marburg disease was to inoculate them with blood from patients who had survived. It was not possible to use an analogous procedure for the disease that occurred in Zaire and the Sudan. Because of the relatively short developmental periods of the disease, the bodies of those who escaped death have not produced sufficient useful antibodies.

However, South Africa recently suggested to WHO that a serum could be supplied which had been developed by its health services to combat the mysterious virus. This serum was obtained from blood transfused in a Johannesburg woman who had previously contracted Marburg disease and been successfully treated.

We have on several occasions criticized the crimes of the South African regime with understandable severity. It therefore gives us great satisfaction to see their desire to want to join the rest of the human community in attempting to find a solution to a painful problem. There is no doubt that WHO will be receptive to this suggestion. Would that it could be [successful] from a regime that has so many reasons to be pardoned and that already has such a large debt vis-a-vis humanity.

II. ANIMAL DISEASES

BRAZIL

TUBERCULOSIS IN CATTLE FORCES IMPORT OF HEIFERS FROM URUGUAY

Rio de Janeiro O GLOBO in Portuguese 11 Oct 76 p 22

[Text] Porto Alegre--Thirty percent of the dairy herd of Rio Grande do Sul is contaminated with tuberculosis. However, the problem should be resolved by the end of 1978 with the importation of 3,000 heifers from Uruguay, aimed at the elimination of the sick animals. The implantation of this program was announced by the secretary of agriculture of Rio Grande do Sul, Getulio Marcantonio, who traveled to Uruguay yesterday, where he will hold talks with the minister of agriculture of that country and with representatives of the Uruguayan Rural Society and the Holstein Breeders Association.

The program of the secretary anticipates the exchange of the 3,000 heifers for agricultural machinery made in Rio Grande do Sul. The first feelers in this direction were already begun in Porto Alegre and will now proceed in Montevideo. The secretary of agriculture intends to inspect the state's dairy herd by zone, conducting tests for tuberculosis and brucellosis. Tuberculous animals should be slaughtered. Their owners ought to send them to slaughterhouses supervised by Dipoa [expansion unknown]. This necessity of delivery to supervised businesses is caused by the fact that some animals can be used for public consumption and some cannot. With possession of a delivery note, a breeder will be able to acquire an imported Holstein heifer, already duly protected and bred to bulls from the Rio Grande do Sul Center for Artificial Insemination (CRIA), of the Secretary of Agriculture. The breeder will receive financing with this heifer.

Secretary Getulio Marcantonio explained that the main objective of the importation of the heifers from Uruguay is the eradication of tuberculosis from the dairy herd of Rio Grande do Sul. With this objective, the

contaminated cows, which are weakening and creating the danger of contamination of other animals, will be eliminated. Another objective is the improvement of the zootechnical standards of the state's herd, because the animals which will replace the sick ones will be selected in Uruguay from among the best, and from the highest lineages. With the renovation of the herd, substituting well animals for sick ones, there will be an increase in milk production. Also, the dangers that the contaminated animals could pass on to consumers of milk and milk products will be remote.

VACCINATION OF CATTLE

Brasilia CORREIO BRAZILIENSE in Portuguese 13 Oct 76 p 8

[Text] About 50,000 doses of vaccines against foot-and-mouth disease were given to the DF [Federal District] cattle herd during the second stage of the prophylactic campaign carried out by the Zoobotanical Foundation. The immunization was evolved by the Brasilia veterinary team which is participating in the National Animal Health Program.

During the operation, 49,078 head of cattle were vaccinated throughout the rural area.

INCIDENCE OF FOOT-AND-MOUTH DISEASE PREDICTED TO DOUBLE

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 27 Oct 76 p 30

[Text] Antonio Pessoa Nunes, the general coordinator of the Ministry of Agriculture's campaign to combat foot-and-mouth disease, yesterday made known that the incidence of the disease in the Brazilian herds will almost double from 1975 to 1976, mainly in terms of the increase of its frequency in the states of Rio Grande do Sul and Sao Paulo. The rate of herds affected during 1975 was 3.8 per thousand and should reach 6.5 per thousand by the end of the year.

Meanwhile, the incidence rate of the disease in cattle, which was 44 per 10,000 last year, rose to 54 per 10,000 in the first half of this year and should reach the rate of 70 per 10,000 cattle by the end of 1976.

According to Pessoa Nunes, who yesterday spoke on "The Comprehensive View of Foot-and-Mouth Disease in Brazil," during the Fifteenth Brazilian Conference on Veterinary Medicine, held in Rio, a marked decrease was noted from 1971 to 1974 in the incidence rate and in the herds affected by foot-and-mouth disease, a trend that began to be reversed beginning in 1975 and which continued to increase throughout that year.

On analyzing the evolvement of the National Plan for Combating Foot-and-Mouth Disease, the general coordinator stated that, with the measures undertaken by the government, it is possible to anticipate a decrease in the frequency and an improvement in the control of the disease. Among these measures, he cited the regional focalizing directed toward combating the virus infection, the restudy of the distribution and operation of the diagnostic laboratories and, in particular, the tightening of regulations regarding the quality of the vaccines.

However, he added, it is important to emphasize that these measures are at present running into serious difficulties, such as the impossibility of maintaining a trained team because of the flight of technicians to private enterprises and to other government areas. Moreover, "the day's work for veterinary doctors established by the Reclassification Plan for Positions and Salaries does not provide for the needs of an animal health defense service."

He made known that the Ministry of Agriculture, through the medium of the PNCFA, beginning early next year, will initiate a new project, in collaboration with the Pan-American Foot-and-Mouth Disease Center, for the purpose of calculating the economic losses caused by the disease in Brazil. This project will be financed by the World Bank.

ECUADOR

OUTBREAK OF FOOT-AND-MOUTH DISEASE AVERTED IN EL ORO PROVINCE

Quito EL COMERCIO in Spanish 5 Nov 76 p 20

[Text] Guayaquil, 4 Nov--An outbreak of foot-and-mouth disease was averted in the province of El Oro, where 20,000 head of cattle were vaccinated in less than 2 months in order to prevent the spread of the illness.

In a vigorous action planned at the national level and directed from Guayaquil, the foot-and-mouth control program headed by Dr Antonio Franco managed to curb an outbreak of the mentioned disease that threatened to infect extensive cattle areas of El Oro. The action was designed to vaccinate 20,000 head of cattle and eliminate the sick animals, at the same time that a campaign was carried out to enlist the aid of cattlemen.

Source

The cases of foot-and-mouth disease were detected in Balsas Parish of Pinas Canton in the early part of September.

The sanitary operation was under the close supervision of Dr Jaime Vivero, chief of field operations at the national level.

Drought and Indolence

The drought which has been affecting the low areas of the province of El Oro has forced the cattlemen to move their herds to higher ground, such as Balsas Parish of Pinas Canton. By not taking the precaution of vaccinating the cattle, the disease could have been spread with dire results for the cattle population of Zaruma, Santa Rosa and Arenillas.

Dr Antonio Franco, regional chief of the Foot-and-Mouth Disease Control Program, said that there is scant cooperation from the cattlemen of El Oro. This indolence redounds against their own cattle herds and endangers those of other sections.

Only three doses a year are required, pointed out Dr Franco, reminding that the price of a dose is 3 sucres.

There Was Support From the Main Office

Funds, medicines and all the necessary means to ward off the foot-and-mouth disease outbreak were sent from Quito, he said. Thousands of head of cattle have been and are being vaccinated to eliminate any danger. Program personnel residing in Guayas and El Oro were opportunely mobilized in vehicles provided for that purpose by the main office. At the same time, an intensive campaign is being conducted to urge the peasants to vaccinate their cattle.

The PAHO and the WHO are cooperating with the national foot-and-mouth disease program in the fight against the terrible illness.

HUNGARY

POSSIBILITY OF VACCINATION THERAPY FOR CATTLE RINGWORM INFECTION

Budapest MAGYAR ALLATORVOSOK LAPJA in Hungarian Vol 32, No 7, Jul 76
pp 441-442 manuscript received 8 Mar 76

[Article by Dr Endre Brydl, veterinarian, cattle-health specialist,
Nagymezo Agricultural Cooperative, Repcelak (Karoly Horvath, chairman)]

[Abstract] The Nagymezo Agricultural Cooperative in Repcelak purchased 244 head of Holstein-Fries cattle in Canada. They were received in October 1975. Severe ringworm infection became evident after 2-3 weeks. Single doses of 2 milliliters of Trichosan Human vaccine (from Human Vaccine Production and Research Institute) were administered to 124 animals. This vaccine, in full concentration, gave favorable results. Full recovery was observed after 8-9 weeks in most instances. Diluted vaccines

performed poorer and recovery took longer. The author recommends further studies to examine the pathological and histochemical mechanisms involved in the effect. This is especially useful since other cattle of Hungarian breed reacted differently to the vaccine (although all were helped).

PERU

ALLOCATION FOR FOOT-AND-MOUTH DISEASE PROGRAM ANNOUNCED

Lima LA CRONICA in Spanish 29 Oct 76 p 8

[Text] The Food Ministry will allocate 320 million soles to carry out a vast program which comprises the construction of a laboratory, quarantine stations for control of foot-and-mouth disease, and six livestock control posts, the equipment of animal vaccination posts in Lima and the provinces, and the production of vaccines against that disease.

Of the total allocation, 80 million soles is intended for the construction and equipment of a modern foot-and-mouth disease center capable of producing 9 million doses of vaccine, with which the national cattle industry will be fully protected against the ravages of that disease. At present, Peru produces only 4 million doses of vaccine against foot-and-mouth disease.

The center will be located in Chorrillos, and it will have its own facilities and equipment to make diagnoses from field samples and a unit designed to conduct research on vesicular diseases of animals.

The first stage of the construction will be started within the next few weeks, and it is estimated that it will be fully completed by early 1978. The acquisition of equipment and instruments is in the bidding stage, under the supervision of the National Foot-and-Mouth Disease Control Program.

Of the quarantine stations to be constructed, one with capacity for 10,000 animals in each quarantine period will be built in Callao, and another with capacity for 500 animals in Arequipa. Some 70 million soles will be spent on the first one, and 40 million soles on the second.

In like manner and at the instance of Gen Rafael Hoyos Rubio, the food minister, 22 million soles will be allocated for the construction of six livestock control posts in Puno and Piura, and for another seven mobile posts in Tumbes, Piura and Puno. It is expected that the invasion of foot-and-mouth disease across border areas will be effectively countered with these facilities.

For identical purpose, the Food Ministry has spent in the current year a total of 128 million soles in the equipment of various cattle vaccination and control posts existing throughout the country.

USSR

INFECTIOUS DISEASES OF ANIMALS AND PROBLEMS OF NATURAL FOCALITY

Frunze INFEKTSIONNYYE BOLEZNI ZHIVOTNYKH I VOPROSY PRIRODNOY OCHAGOVOSTI in Russian, Izd. "Ilim," 1975 pp 2, 121

[Excerpts] [Annotation] This collection contains articles which present results of production checking of methods of control of paratyphoid in sheep and lambs with the use of furazolidone. It contains descriptions of experiments in production of hyperimmune globulins for cattle serum, their use in the case of paratyphoid in lambs and experiments in checking attenuated vaccine strain *S. abortusovis* for activity and safety.

It presents data concerning the study of the bacteria carrier during paratyphoid of sheep with the use of fluorescing antibodies, by the study of strains of the causative agent of dysentery in lambs with changed biochemical properties and results of a study of wild birds which are carriers of pathogenic clostridia, tuberculosis mycobacteria or pasteurellae.

It also contains a consideration of the role of black-legged ticks and Argasidae ticks as possible keepers and carriers of pathogenic clostridia.

Two articles concern the study of virus diarrhea in cattle and sheep and the role of black-legged ticks in the preservation of salmonella.

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INFECTIOUS AND INVASIVE DISEASES OF WATERFOWL

Leningrad INFEKTSIONNYE I INVAZIONNYE BOLEZNI VODOPLAVAYUSHCHIKH PTITS
in Russian, Izd. "Kolos," 1975 pp 2, 149-150

[Annotation by Mstislav Vladimirovich Kaylov and Aleksandr Borisovich
Teryukhanov]

[Excerpt] This book presents a discussion of the most prevalent infectious and invasive diseases of waterfowl. Each disease is discussed by the scheme: causative agent, susceptibility, sources and means of infection, clinical signs, pathologo-anatomical changes, diagnosis, measures of control and prophylaxis.

The section "Helminthiasis" was written by Candidate of Biological Sciences A. D. Luzhkov.

The book is intended for the use of veterinary specialists and zootechnicians.

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TRICHOMONIASIS IN CATTLE

Alma-Ata TRIKHOMONOS KRUPNOGO ROGATOGO SKOTA in Russian, Izd. "Kayner,"
1975 pp 2, 120

[Book by Petr Nikolayevich Kulichkin]

[Excerpts] [Annotation] This book contains a detailed description of the morphology and biology of the causative agent of trichomoniasis in cattle and an exposition of the clinic of diseases caused by them. It describes diagnosis and therapy of this serious disease with the use of new data of Soviet and foreign researchers. Special attention is given to methods of investigating farms for trichomoniasis and means of sanitation of them with the help of a highly effective method, trypaflavine therapy.

The book is intended for scientists, students of schools of veterinary and practicing veterinarians.

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INFECTIOUS GASTROENTEROCOLITES IN SWINE

Moscow INFEKTSIONNYYE GASTROENTEROKOLITY SVINEY in Russian, Izd. "Kolos,"
1975 pp 2, 239

[Book by Petr Ivanovich Pritulin]

[Excerpts] [Annotation] This book presents contemporary data concerning gastroenteritis, gastroenteritic and pneumogastroenteritic enterovirus infections, dysentery, enterotoxemias, colibacteriosis and salmonella infections in swine. A special chapter is devoted to prophylactic and anti-epizootic measures in swine complexes and on farms during infectious gastroenterocolites.

The book is intended for veterinary specialists on kolkhozes and sovkhozes.

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VENEZUELA

EIGHT-STATE SURGE OF CATTLE DISEASE REPORTED

Caracas EL UNIVERSAL in Spanish 5 Oct 76 p 2-16

[Text] Barquisimeto, 4 Oct (INNAC)--Outbreaks of bovine leukosis have been discovered in eight states, and livestock throughout the country are in danger, according to reports from Lara State College of Veterinary Medicine.

The directors said they would favor a declaration of a state of emergency in the cattle-raising sector, because of the discovery of bovine leukosis in eight states of the country. The veterinary doctors, while recommending the state of emergency to the authorities, also stated that they would like to see the implementation of some sort of subsidy for the cattlemen whose ranches are being decimated by the disease.

Reports were made by Drs Nelson Mujica, Mariano Diaz, Rafael Escalona and Emperatriz Padilla, together with specialists in animal pathology from the School of Veterinary Sciences of Centro-Occidental University, Drs Julian

Paparella and Gustavo Bracho, who gave details of the disease while they were formulating a series of recommendations to help in its control.

Outstanding among the recommendations is that importation of vials of semen be controlled, because the virus which causes the disease prefers to live in the spermatozoids, which, when the egg is fertilized, contributes to the reproduction of the virus.

The veterinarians also warned of the possibility of transmitting the disease to humans through the consumption of raw milk, and they emphasized the importance for human health of taking immediate measures to control the spread of bovine leukosis.

They mentioned that this serious situation exists in some states, citing those states most affected as Lara, Aragua, Carabobo and Zulia, although cases have also been reported in Yaracuy, Portuguesa, Anzoategui and Merida.

In addition, the Lara Veterinary College requested that the national government, through MAC, control the importation of semen, because the males are direct carriers of the virus which causes bovine leukosis. They also recommended that sanitary norms be set for the ranches to avoid the spread of the disease.

Finally, Dr Gustavo Bracho stated that great care must be taken with raw milk. If cow's milk is ingested in its original or raw state, the disease might be transmitted to humans, although this has not been proved conclusively. However, in a test performed on a monkey, the animal was given raw milk from a sick cow and became ill afterwards. This does indicate that the leukosis virus will cross the bovine species barrier and attack all species, from fish to men, although its effect on birds is less alarming.

LIVER DISEASE ATTACKS NORTH ZULIA CATTLE

Caracas EL NACIONAL in Spanish 13 Oct 76 p D-12

[Text] Maracaibo, 12 Oct--An outbreak of liver flukes, or liver rot, which poses a grave threat to livestock, has been discovered in the northern part of the state of Zulia, on ranches which use irrigation systems.

Governor Omar Baralt has gone to El Loral Experimental Station in the district of Mara to find out more about this disease. Liver rot, it is reported, is a parasitic disease which lodges in the animal's liver, causing serious damage to this organ.

The parasite breeds in snails which are found on the ranches using the irrigation systems.

Official reports indicate that liver flukes are quite general, but that until now the appropriate medication to combat the disease has been used. An estimate of the extent of liver rot indicates that more than 2,000 head of cattle are affected.

It is also reported that it is necessary now to seek preventive means to check the spread of the disease.

III. PLANT DISEASES AND INSECT PESTS

BRAZIL

WHEAT RUST ENDANGERS CROP IN PORTO ALEGRE

Rio de Janeiro O GLOBO in Portuguese 16 Oct 76 p 22

[Text] Despite the optimism of directors of the wheat-growing cooperatives throughout the state, the harvest wheat crop this year can be blighted if it is not freed of the wheat rust which is attacking the plantations in Grande Santa Rosa, one of the state's main production regions, where about 20 percent of the crop has already been lost. The statement was made by Alex Setti, president of the Carazinho wheat-growing cooperative.

According to him, the harvesting in the other regions "should begin normally in November, without the exaggerations which are being circulated around there."

In the next 10 days, they should begin harvesting the wheat in Palmeiras das Missoes, Panambi and Ijuí and in the beginning of November, in Cruz Alta. According to the cooperative directors, there is enough space to garner the wheat, for nine new granaries have been constructed this year throughout the state.

DISEASE AFFECTS COFFEE PLANTS IN MINAS GERAIS

Rio de Janeiro O GLOBO in Portuguese 10 Oct 76 p 32

[Text] Belo Horizonte--Smut, a disease which attacks the foliage of coffee trees, is being considered as one of the principal causes of the fall of production of Minas Gerais coffee during this harvest, according to information from Epamig--the Enterprise for Technical Assistance and Rural Extension in Minas Gerais.

Expected production in Minas Gerais was 3 million sacks, but there was a drop of over 1 million, owing not only to the smut, but also to the periods of drought and freezing which occurred during the formation of the coffee plantings.

According to a study done by experts of Epamig, Fernando de Assis Paiva, Sara Maria Chalfoun, and Cicero Moreira da Silva, the effect of the smut will only be felt in subsequent harvests. In their opinion, "if the coffee groves of Minas Gerais had received correct treatment in the last 4 years, production in 1976 would be 4 million sacks, even allowing for the problems caused by the drought and freezing."

The study done by the experts of Epamig also showed that the principal reason for the continuation of the smut, which is turning into a chronic disease, is the lack of powdering, or its use at the wrong seasons or in the incorrect quantities.

Even though the ideal is five powderings in the period between November and April, according to custom, research from Epamig showed that in southern Minas Gerais, the principal producing area of the state, only 63 percent of coffee cultivators did four or more applications, and not always in the proper seasons. Also, the dosage used was 2 kilograms of fungicide per thousand plants, when the optimum is 4 to 5 kilograms.

BAHIAN COCOA INFECTED BY PLANT DISEASE

Rio de Janeiro O GLOBO in Portuguese 10 Oct 76 p 32

[Excerpt] Salvador--The failure of the early harvest because of a violent outbreak of "brown rot," a disease which causes field damages on an order of \$100 million a year, left producers in southern Bahia practically without alternatives for escaping the impasse created by the delay in shipment of 600,000 sacks of cocoa sold as futures. The renegotiation of the contracts or financing of the debts by the Bank of Brazil for medium-term liquidization, signify in practice a transfer of the problem to the future in an attempt to spread it over subsequent harvests.

The producers recognize that the difficulties existing in overcoming the crisis, which affects more than a thousand owners of cocoa plantations in the region, are easily made clear if a more profound analysis of the situation is made. Despite high prices in the last 3 years, there has been a gradual decapitalization of cultivation, which consequently made it impossible to enjoy the high profits commensurate with the average foreign exchange earnings of \$300 million per year from cocoa export.

This year, for example, the great majority of the 16,000 producers of the region sold cocoa in flower, thus giving up the advantage of the highest prices in the entire history of the industry: in only 8 months, an

arroba [measure of approximately 15 kilograms] of cocoa went from 140 cruzeiros to 350 cruzeiros. But, far less than 10 percent of the cultivators will take advantage of such favorable prices; the great majority sold their cocoa at between 130 and 140 cruzeiros, said the Consultive Council of Cocoa Producers, and those who managed to overcome the difficulties of lack of resources to settle debts from last year and sustain the costs of the inter-harvest period, hurried to sell when prices reached 240 cruzeiros.

Differences of Opinion

The opinions of cocoa producers and of Ceplac [Executive Commission for the Cacao Production Plan] conflict exactly over the dimensions of the crisis. For the experts from Ceplac there is no global crisis in the economy. Nor are there reasons for direct government intervention in the cocoa trade as occurred in 1968, when production was not sufficient to meet international commitments, and the industry went through one of the most terrible crises in its history, with marks that have repercussions to the present time.

This is easy to prove, cites Roberto Midlej: this year the industry will collect its second largest harvest in history (the largest, 4.6 million sacks, was collected last year), with foreign exchange earnings of \$360 million, as opposed to \$330 million the previous year. The forecast of foreign earnings, which at the beginning of the year was \$320 million, was exceeded thanks to the successive rises in price quotations for cocoa on the foreign market.

The cultivators have a different opinion. The vice president of CPCC [Consultive Council of Cocoa Producers], Humberto Salomao, thinks that if Ceplac were to recognize a crisis situation it would also recognize its failure in controlling "brown rot," a disease which since the 1920's violently strikes the fields, and the control of which Ceplac still has not managed to make more economical.

"Practically, the immunization is done tree by tree, over an extent of more than 400,000 hectares," comments another producer, Marcelo Gideon, one of the creators of the \$1 million prize which CPCC created for the scientist (national or foreign) who discovers an efficient means of combating "brown rot." "If we lose \$10 million a year, why cannot we give a \$1 million prize to whoever can help us?"

The discussion over the "rot" gains relevance because that was the disease responsible for failure of the early harvest (collected between March and September).

AFRICAN BEES NEAR GUYANA BORDER

Rio de Janeiro O GLOBO in Portuguese 8 Oct 76 p 6

[Text] Gold and diamond miners in the Guiana forests along the Brazilian frontier abandoned their washings, terrorized by swarms of African bees which have already killed some people, as reported yesterday in the newspaper ULTIMAS NOTICIAS. According to the paper, the miners preferred to leave "the world of riches" and seek other regions which are free from the dangerous bees.

VIETNAM

DISEASES OF NEW RICE VARIETIES DISCUSSED

Hanoi KHOA HOC VA KY THUAT NONG NGHIEP in Vietnamese No 7, Jul 76 pp 513-515

[Article by Pham Qui Hiep]

[Text] During the past several years many new, highly productive rice varieties have been widely used in production. But because of the rather serious damage caused by diseases, in the various areas the productivity of those rice varieties has been unstable. We have researched the diseases affecting a number of new varieties under certain physiological conditions in order to understand the ability of such varieties to resist and contract diseases.

Research Results

A. The principal disease composition of a number of rice varieties:

1. The spring season: We researched 12 varieties: dwarf Tran Chau, A4, Nong Nghiep 22, A5, hybrid glutinous rice, Jaya, Nong Nghiep 8, Pelita I, Pelita II, White Pi, Dewiratich, and Padigogo 74. Divided according to period of growth and relative fertilizer tolerance, those varieties are of two types:

The quickly maturing type includes dwarf Tran Chau, Nong Nghiep 22, A4, hybrid glutinous rice, and A5.

The slowly maturing type includes Nong Nghiep 8, Pelita I, Pelita II, White Pi, Padigogo 74, Dewiratich, and Jaya.

The results of the research show that:

The dwarf Tran Chau variety is affected by the following diseases: *H. oryzae*, *curvularia lunata*, *sclerotium oryzae*, *pellicuria lunata*, *xantho-monas oryzicola*, and *xantho-monas oryzae*. Of those diseases, there are two very serious ones: *sclerotium oryzae* (disease ratio at time of filling out: 62.3 percent) and *curvularia lunata* (highest disease ratio: 64.2 percent and disease index: 33.8 percent at time of filling out). The next most serious is *pellicuria lunata*, 39.6 percent when the rice heads.

In comparison to the spring seasons of 1972 and 1973, in the 1974 spring season those diseases increased suddenly in the dwarf Tran Chau variety. A study during the main production season in Chinh Trung, Cuu Viet, and Thuan Ton cooperatives in Gia Lam District showed that 59.3 percent of the plants were affected by *sclerotium oryzae*, 60.6 percent of the leaves were affected by *curvularia lunata*, and 22.9 percent of the plants were affected by *pellicuria lunata*.

Perhaps the reason is that the dwarf Tran Chau variety has poor heat tolerance (Dao The Tuan, 1972) when it is heading and filling out and encounters sudden high temperature. Furthermore, if during the previous period there was prolonged cold and the plant was deficient in mobilizing and accumulating bulk, when it encounters an unfavorable environment its disease resistance is weak, which creates favorable conditions for those two diseases to arise and develop.

The Nong Nghiep 22 and A4 varieties: In those two varieties we found the same diseases as in the dwarf Tran Chau variety, and that the *sclerotium oryzae* disease was also the most serious: the highest ratio of diseased plants at the time when the rice was filling out was 56.3 percent in Nong Nghiep 22 rice and 52.8 percent in variety A4. The *curvularia lunata* disease is also a serious disease in the A4 variety: the disease ratio was 64.6 percent and the disease index was 24.6 percent.

In the other varieties we also observed the above diseases, but the most serious disease affecting the slowly maturing group of varieties was the *curvularia lunata* disease. For example, with regard to White Pi the highest disease ratio was 94.54 percent, and the disease index was 60 percent. With regard to Pelita I the disease ratio was 77.05 percent and the disease index was 30.14 percent. The *sclerotium oryzae* disease was also present to a notable degree (ratio of diseased plants when filling out: 22.6 to 23.5 percent). Like the 1973 spring season, 1974 was a year during which diseases increased suddenly. That may be explained by the fact that during its growth period the rice encountered prolonged cold, the skies were cloudy, and the plants assimilated and accumulated nutrients poorly, and during the heading period (end of May and first part of June) the weather suddenly became hot, which afforded a good opportunity for *curvularia lunata* to arise.

The Nong Nghiep 8 variety was affected by *pyricularia oryzae* during the period in which the rice was straightening up and budding (10 to 20 April). An investigation at the experimental plot at Cuu Viet showed that the highest ratio of diseased leaves was 10.2 percent. An investigation in an experimental plot showed a result of 26.9 percent, and at the Nhu Quynh cooperative the result was 7.97 percent.

2. Tenth Month Season: We researched two groups of varieties:

The quickly maturing group, with average fertilizer tolerance, including A4, A5, hybrid glutinous rice, G1, G2, and Nong Nghiep 22.

The slowly maturing group, with high fertilizer tolerance, including Nong Nghiep 8, T125, Nong Nghiep 5, Pelita I, Pelita II, Padigogo 74, Dewiratic, and Nong Nghiep 10. The diseases found were *xantho-monas oryzae*, *xantho-monas oryzicola*, *H. oryzae*, *curvularia lunata*, *pellicularia lunata*, "von," and *aphelenchoides oryzae*.

Under experimental conditions it was noted that among the quickly maturing rice varieties, all except the Nong Nghiep 22 variety were heavily affected by *xantho-monas oryzae*. The highest disease ratio was 36.8 percent for hybrid glutinous rice, 34.6 percent for G1, 25.6 percent for G2, and 23.7 percent for Nong Nghiep 22. Varieties A4 and Nong Nghiep 22 were heavily affected by *sclerotium oryzae* (Nong Nghiep 22: 23.7 percent of the plants; A4: 16.6 percent of the plants). During the same period, an investigation at the Nhu Quynh cooperative showed that that disease had also damaged 17.6 percent of the plants, and in some cases paddies were laid waste by the disease. An investigation of Nong Nghiep 22 rice at the Cuu Viet cooperative showed a disease ratio of 19.6 percent.

The A4 and Nong Nghiep 22 varieties were heavily affected by *sclerotium oryzae*, perhaps because of their spongy stems and soft derms, and their leaf stems not being tightly affixed to the stems.

In Nong Nghiep 22 rice transplanted during the 10th month season of 1974, as well as during the 10th month seasons of 1972 and 1973, the *xantho-monas oryzae* disease was very light in comparison to the other varieties.

In the slowly maturing group, Nong Nghiep 8 was heavily affected by *xantho-monas oryzae*: the disease ratio was 39.8 percent and the disease index was 22.6 percent. For *curvularia lunata* the disease index was 3.2 percent and the disease ratio was 8.6 percent, and the other diseases were very light. Except for Nong Nghiep 8, the other varieties were very lightly affected by *xantho-monas oryzae*.

<u>Variety</u>	<u>Disease ratio (%)</u>	<u>Disease index (%)</u>
Tl25	16.3	8.5
Nong Nghiep 5	13.8	5.3
Pelita I	10.1	3.3
Pelita II	13.9	5.6
Padigogo 74	10.6	6.2
Dewiratich	14.2	5.9
Nong Nghiep 10	9.6	3.5

But the effect of *curvularia lunata* was very serious:

<u>Variety</u>	<u>Disease ratio (%)</u>	<u>Disease index (%)</u>
Pelita I	94.5	45.9
Pelita II	89.6	41.5
Nong Nghiep 5	77.3	32.6
Padigogo 74	59.6	26.0
Dewiratich	35.2	31.0
Tl25	29.6	18.6
Nong Nghiep 10	21.2	13.2

In recapitulation, diseases were observed in all the rice varieties researched during the 1974 spring and 10th month seasons.

The quickly maturing varieties which have poor fertilizer tolerance are often seriously affected by *sclerotium oryzae* during both the 5th month and 10th month seasons, and also very early contract the *xantho-monas oryzae* disease, but are little affected by *curvularia lunata*.

The slowly maturing varieties are easily affected by *curvularia lunata* (including both the spring and 10th month seasons), but are little affected by *xantho-monas oryzae*. Nong Nghiep 8 is heavily affected by *xantho-monas oryzae* and even by *piricularia oryzae*.

During the spring and 10th month seasons *xantho-monas oryzae* causes less damage than during the 10th month season. *Sclerotium oryzae* and *curvularia lunata* may damage the varieties that contract those diseases during both the spring and 10th month seasons.

The results of the experiments show that with regard to the new varieties the diseases that cause rather serious damage are *xantho-monas oryzae*, *curvularia lunata*, and *sclerotium oryzae*. However, we must also consider the "root rust" disease [nghet re kho do]. Within the sphere of the experiments, in many plots that disease did not appear, but in the course of the main-season production it was rather serious, and was often observed in fields that are marshy, acidic, saline, and poor in nutritive elements (during the spring season 15 mau in Cuu Viet were affected, in Cuu Tru cooperative 8 mau were affected, in Vang cooperative 6 mau were affected, and in Xuan Cau cooperative 150 mau were affected).

B. Development of Xantho-Monas Oryzae and Curvularia Lunata in Nong Nghiep 8 and Nong Nghiep 5

We researched the influence of the seasonal schedule and nitrogenous fertilizer on disease development. With regard to Nong Nghiep 8, the first seedling sowing date was 5 June and the transplanting date was 5 July; the second seedling sowing date was 15 June and the second transplanting date was 15 July; the third seedling sowing date was 25 June and the third transplanting date was 25 July.

All three plantings were fertilized with an initial application of 7 tons of animal manure per hectare, with the following nitrogenous fertilizer applications:

Initial fertilizing + 30 N supplementary fertilizing of entire area.

Initial fertilizing + 60 N supplementary fertilizing of entire area.

Initial fertilizing + 90 N supplementary fertilizing of entire area.

The results of the experiment showed that during the first period there was very little disease in rice planted according to the formula of 30 N supplementary fertilizing (highest disease ratio: 16.4 percent; disease index: 7.2 percent). Rice productivity was 32 quintals per hectare. There was moderate disease in rice planted according to the 60 N supplementary fertilizing formula (highest disease ratio: 25.4 percent; disease index: 12.3 percent; rice productivity: 29 quintals per hectare). Disease was most serious in rice planted in accordance with the 90 N formula of supplementary fertilizing (highest disease ratio: 79.6 percent; disease index: 56.3 percent) and the rice was seriously affected, so productivity was only 23 quintals per hectare.

During the second seasonal period disease development was similar to that in seasonal period No 1: disease was serious in rice planted in accordance with the formula of spreading much nitrogenous fertilizer. In rice fertilized with 90 N fertilizer, the highest disease ratio was 69.6 percent and the disease index was 49.3 percent.

In rice fertilized with 60 N fertilizer the highest disease ratio was 20.2 percent and the disease index was 8.6 percent. In rice fertilized with 30 N fertilizer the corresponding figures were 13.5 and 6.0 percent, and the corresponding productivity figures were 2.7, 3.1, and 3.4 quintals per hectare. During the third seasonal period the xantho-monas oryzae disease was very light in rice grown in accordance with all three nitrogenous fertilizer formulas.

<u>Formula</u>	<u>Disease ratio (%)</u>	<u>Disease index (%)</u>	<u>Rice productivity (quintals/hectare)</u>
30 N	5.7	2.1	32
60 N	10.2	3.6	33
90 N	13.5	5.9	37

Thus, in terms of the seasonal periods, Nong Nghiep 8 transplanted before 10 June soon became seriously infected by disease above the 60 N/hectare level. In rice transplanted at the end of July there was very little disease and it was highly productive, for during that period rice buds and heads after 10 October, when the weather is cool, there is little rain, and there is low humidity, conditions which are not favorable for the appearance and development of xantho-monas oryzae bacteria. Those results were identical to those in 1972 and 1973.

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